

MULTIPLE-CASE DESIGN OF SECONDARY SPECIAL EDUCATORS TEACHING STUDENTS
WITH HIGH-INCIDENCE DISABILITIES IN SELF-CONTAINED SETTINGS: RATIONALES FOR
INSTRUCTIONAL STRATEGY CHOICES AND PERSPECTIVES ON EVIDENCE-BASED
PRACTICES

by

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A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy at George Mason University

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Dedication

This work is dedicated to my husband, Bart, and our children, Marissa and Tommy.

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Abstract

MULTIPLE-CASE DESIGN OF SECONDARY SPECIAL EDUCATORS TEACHING STUDENTS WITH HIGH-INCIDENCE DISABILITIES IN SELF-CONTAINED SETTINGS: RATIONALES FOR INSTRUCTIONAL STRATEGY CHOICES AND PERSPECTIVES ON EVIDENCE-BASED PRACTICES

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Evidence-based practices (EBPs) and instructional strategies are the methods through which content is delivered to students. Multiple internal and external factors influence the choice of instructional strategies and EBPs used by secondary special educators working with students with high-incidence disabilities (HID) in the self-contained setting.

Three participants were included in this multiple-case study to discern whether there are differences in what secondary special education teachers at the beginning, mid-career, and senior stages of their careers state they use when selecting instructional strategies. The instructional strategies stated most frequently and the decision-making process were examined. Any similarities or differences between or among special educators at different stages of their careers were identified. Each special educator participated in multiple interviews, two classroom observations, and responded to a

questionnaire about their experiences using EBP and instructional strategies. In addition, evidentiary documentation and the special educators' narrative comments from the interviews were used to develop each case study.

Results indicated that each special educator based instructional strategies primarily on student needs and student engagement, and were not influenced by administrative or other outside factors. Each special educator valued the theoretical use of EBPs but did not consider educational research when selecting instructional strategies. Further, based on the number of years teaching experience, the special educators in this current study did not differ significantly in their use of strategies. Each special educator valued direct instruction, question and answer, and an interactive teaching model. The beginning and mid-career teachers used technology to engage students. The senior teacher used traditional study packets for instruction and review.

Overall, each special educator theorized that EBPs were suitable for conveying content material to students with HID in the self-contained special education setting. Each was unaware, however, of the mandate for using EBPs, did not feel obligated to use EBPs, and identified student needs and standardize testing as the driving forces behind selecting instructional strategies. Further discussion as it relates to the selection and use of instructional strategies, are presented along with implications for practice, limitations, and future research.

Chapter 1: Introduction

Federal regulations mandating the use of evidence-based practices (EBPs) in public schools came about as a result of two major federal education acts: the Individuals with Disabilities Education Improvement Act of 2004 (IDEIA) and the No Child Left Behind Act of 2001 (NCLB). The NCLB legislation emphasized the use of EBPs identified through scientifically based research, yet no clear guidelines were established to direct educators how to select and implement these EBPs. States receiving funding through NCLB, and disseminating financial support to local educational agencies (LEAs) comprised of public schools and regional districts, were required to ensure that the funds were used to

implement a comprehensive school reform program, found through scientifically based research, to significantly improve the academic achievement of students participating in such programs as compared to students in schools who have not participated in such programs, or that has been found to have strong evidence that such programs will significantly improve the academic achievement of participating children. (No Child Left Behind Act of 2001, § 1606(a) 11(a & b)

Given these broad directives, defining and identifying specific EBPs proven effective through scientific research, particularly in special education, has not only been difficult

but open to interpretation (Cook & Schirmer, 2006; Cook, Tankersley, Cook, & Landrum, 2008a; Odom et al., 2005; Slavin, 2008).

Terms Used to Describe Instructional Methods

Many professional fields, including psychology, business, and advertising, use research and evidence to make decisions about treatment and products. Having originated in the medical field, the term *evidence-based practice* refers to “the conscientious, explicit and judicious use of current best evidence in making decisions about the care of the individual” (Sackett, Rosenberg, Gray, Haynes, & Richardson, 1996, p. 71). In the broadest sense, EBP is considered a systematic approach to a treatment or a process, combining evidence, needs, and clinical expertise, to produce services that are individualized and empirically sound (Shlonsky & Gibbs, 2004). The concept of using EBPs in special education has been brought to the forefront due to the requirements of IDEA and NCLB.

Research about instructional strategies and EBPs can be confusing when authors and educators use a variety of terminology to reference these practices. Developing standardized terminology has been suggested to help eliminate any confusion. The terms *strategy*, *practice*, and *method* are frequently used interchangeably and are generally similar in meaning. Cook et al. (2008a) proposed specific definitions for instructional strategy, best practice, and evidence-based practice. *Instructional strategy* was defined as the approaches a teacher may take to actively engage students in learning, designed to meet specific learning objectives, learning styles, and the development of learners. The term *best practice* was defined as any strategy based on any number of sources, including

personal preference or experience, peer recommendations, professional development, commercially developed instructional tools, educational training, and information from websites. The authors noted that educators frequently referred to instructional practices as best practices without regard for supporting research that could show positive impact on student outcomes. Cook et al. (2008a) noted that most importantly, credible experimental research should be the distinguishing difference between evidence-based practices and best practices. Detrich and Lewis (2012) proposed that the term *EBP* be reserved for the decision-making process of selecting educational practices informed by the best available evidence. Marzano (2007) and Mesibov and Shea (2011) noted that EBPs are instructional interventions that are experimentally tested and likely to result in consistent positive results when used with fidelity.

In this study, specific terms are used with specific meaning: *evidence-based practice* refers to an instructional method that meets strict criteria based on empirically supported evidence. The term *instructional strategy* refers to an instructional method that has not been based on research evidence. While it is true that EBPs may be instructional strategies, instructional strategies may not always be EBPs. Both are considered instructional methods.

Evidence-Based Practices in Special Education

Quality research using experimental control to identify instructional methods (e.g., peer tutoring) that cause improved student outcomes (e.g., reading fluency) provide the best source of EBPs (Torres, Farley, & Cook, 2012). These EBPs are based on their record of effectiveness in providing a quality education to students with disabilities, and

federal regulations require their use (Denzin & Giardina, 2006; Torres et al., 2012).

Special educators endeavoring to improve the educational outcomes of their students may identify ways of teaching students from a multitude of sources including websites, textbooks, college instructors, professional development trainers, and colleagues. Their effectiveness, however, may be uncertain and unproven, and could result in “well-intentioned teachers implementing ineffective practices” (Cook et al., 2008a, p. 70).

While the intentions of NCLB and IDEIA were to improve academic achievement for students with disabilities, no specific guidelines were provided for this challenge. Special educators have faced the task of defining and refining which strategies and EBPs produce the most significant educational outcomes and are appropriate for meeting specific student needs (Torres et al., 2012). Teaching is not always an exact science, however, and individual teachers bring individual methods and styles of instruction into the classroom (Mesibov & Shea, 2011). Mesibov and Shea (2011) found that educators may independently select the tools of their craft, not knowing if their efforts will create positive results for students with disabilities. With good intentions, educators may be confused due to the overwhelming and often interchangeable use of instructional terminology, including EBP, instructional strategy, and instructional practice (Cook et al., 2008a). Implementing EBPs with fidelity, as they were designed and for whom they were designed, is a significant feature of EBPs but may be overlooked by teachers as a result of variations in experience and student needs (Mesibov & Shea, 2011).

Cook and Cook (2011) identified two aspects of EBPs in special education: macro-EBP, referring to educational programs that encompass entire curricula; and

micro-EBP, referring to specific strategies found within larger programs or initiatives. Educational research may use the term EBP to indicate skills (e.g., leadership style), programs (e.g., Content Literacy Continuum), instructional strategies (e.g., mnemonic strategies), and broad initiatives (e.g., Science, Technology, Engineering, and Math (STEM) education) (Cook et al., 2008a; Cook, Tankersley, & Landrum, 2009; Metz, Espiritu, & Moore, 2007; Torres et al., 2012).

Biesta (2007) examined the use of EBPs in special education through three different lenses: (a) the appropriateness of comparing educational practices with medical or business practices, (b) the role of educators in determining professional practices, and (c) the role of research in determining educational EBPs. The author reasoned that using EBPs in education was quite different compared to using EBPs in the medical or business fields: “Being a student is not an illness, just as teaching is not a cure” (p. 8). Rather, the process of learning was described as a recursive system within a series of mediated interactions that provided opportunities for students to respond and demonstrate learning through their responses. Special educators are frequently self-reliant when selecting and implementing instructional strategies but may not have the experience or rationale to support their choices. Educational research may identify strategies that prove to be effective under controlled situations but the extent of their value in universal situations may be overstated and far-reaching (Mesibov & Shea, 2011).

Special educators determine how to present and reinforce information and skills for students with disabilities, and it is important that these educators use methods and strategies most likely to improve student educational outcomes (Cook et al., 2008a).

Mattison and Schneider (2008) attributed strong positive effects to special education outcomes when EBPs were used consistently and with fidelity with students in classroom settings. Despite their potential benefits, research suggests that EBPs continue to be underutilized by teachers when instructing students with disabilities (Cook & Odom, 2013; Wanzek & Vaughn, 2006). Practical wisdom and common sense clearly are necessary when making instructional decisions, and not all EBPs are appropriate for all students with disabilities and educational situations (Cook & Odom, 2013). EBPs should be an important component in teachers' instructional repertoires, but it may be unreasonable to limit teachers to using specific techniques for all students in all situations (Mattison & Schneider, 2008).

Practices that may not be based entirely on empirical research are referred to as *instructional strategies* or *instructional practices* (Cook et al., 2008a). Instructional strategies may be appropriate for use in certain situations—if insufficient research has been conducted regarding a practice that may be effective anecdotally (e.g., Reading Mastery) (Mesibov & Shea, 2011). Cook and Cook (2011) noted that while EBPs are valuable tools when teaching students with disabilities, additional factors are equally important in determining how to teach. Special educators may be experienced senior teachers or first-year novices and base their instruction on what they have learned through years of firsthand experience or in college classes. Teachers make instructional decisions based on student attributes, including intellectual, emotional, and social abilities, as well as educational experiences and socioeconomic backgrounds (Cook & Cook, 2011). School district funding and the availability of support technology may force

teachers to use what is available versus what may be optimal (Cook & Cook, 2011).

Students with specific needs may require unique instruction, and the strategies may not be EBPs (Cook & Cook, 2011; Mesibov & Shea, 2011). Additionally, teachers may simply not be aware of or have access to research informing them about educational practices (Cook & Odom, 2013; Torres et al., 2012).

How EBPs are used to deliver instruction. Students requiring special education may receive their services in a variety of settings. Inclusive education, whereby students with disabilities receive instruction in the general curriculum alongside students without disabilities, has become common for students with high-incidence disabilities (HID) (IDEA, 2004). High-incidence disabilities include specific learning disabilities (SLD), emotional and/or behavioral disabilities (EBD), speech and language impairment (SLI), mild intellectual disabilities (MID), and other health impaired (OHI) including attention deficit hyperactive disorder (ADHD). The level of support available to these students may differ greatly compared to the support provided in a self-contained class comprised of students with similar needs (Mitchell, 2007). Students with disabilities typically process and retain content information differently yet are placed in quick-paced general education classes driven by standardized testing and are expected to achieve academic results similar to students without disabilities (Cook & Cook, 2011; Detrich & Lewis, 2012). A significant body of educational research recognizes the importance and value of using EBPs for students with disabilities regardless of their educational placement (e.g., Cook, Landrum, Tankersley, & Kauffman, 2003; Cook et al., 2008a; Landrum, Cook, Tankersley, & Fitzgerald, 2002; Scruggs, Mastropieri, Berkley, & Marshak, 2010b).

Determining the EBPs that are effective in different settings for students with different needs, unfortunately, is not a simple process.

How EBPs are identified. Researchers and experts in special education may differ on which methods should be used to identify EBPs (Slavin, 2008; Wanzek & Vaughn, 2006). Cook et al. (2009) looked extensively at the research examining how EBPs in special education were identified. They found that the quality of research studies and results were primarily dependent on the research design and methodological rigor. The favored research design was experimental study with treatment and control groups, generally accepted as the most reliable determinate method for instructional practices. Cook et al. (2009) stated, however, that the research indicated that other methods of investigation, such as single-subject studies, quasi-experimental studies, qualitative research, and correlational research provided considerable value when determining EBPs. Single-subject and case study research studies were found to contribute to the research base, but could not provide generalizable results due to the small number of participants included and the often unique study settings. The researchers also cautioned against relying on statistics from studies using large numbers of students since statistically significant findings may be identified when actual outcomes may not be educationally meaningful for students (e.g., educational technology). Cook et al. (2009) concluded that no single formula was available for determining which instructional strategies were EBPs.

The Council for Exceptional Children (CEC), a nationally recognized organization that supports professionals working in the field of special education, has

attempted to delineate definitions and guidelines regarding EBPs. CEC (2014), along with a panel of experts in the field of educational research, developed a guide specifying the quality indicators and types of research deemed acceptable when seeking to identify a practice as evidence based, including experimental group comparison research and single-subject research. This may help unify a large body of educators and researchers working to develop guidelines for identifying effective educational practices.

The U.S. Department of Education developed the What Works Clearinghouse (WWC) in 2002 as a “trusted source of scientific evidence of what works in education” (2003) for educators, policymakers, researchers, and the public. This routinely updated Web-based resource promotes practices verified as effective through experimental research for use with students having differing needs.

Scruggs et al. (2010b) investigated interventions used in secondary-level content courses for use with students with disabilities and reported on the effectiveness of several instructional practices. The researchers noted that studies investigating effective instructional practices for secondary students were limited in scope and number and suggested that additional research would be beneficial to identifying what works with this student population. Teachers were recognized as the critical component to effective instruction since they determine how students are taught and ultimately impact student outcome.

Who uses EBPs. Boardman, Arguelles, Vaughn, Hughes, and Klingner (2005) interviewed and surveyed general and special education teachers at the elementary level regarding their awareness and use of EBPs. The researchers sought to determine whether

or not teachers were in favor of using EBPs, if they had access to and used educational research, and what influenced their selection of instructional practices. The researchers also examined teachers' impressions about being required to use EBPs.

Cook, Tankersley, and Harjusola-Webb (2008b) suggested that in order to fully consider how practitioners—and specifically special educators—selected and implemented instructional practices, additional research utilizing surveys, case studies, observational research, and qualitative studies be employed at the elementary and secondary levels. These studies would examine how educators select and implement EBPs and suggest how this may influence the educational process for students with disabilities.

Biesta (2007) compared the mechanics of research to the value of educational experience, noting that the true value of educational research was not in reporting the results of implementing instructional strategies conducted in experimental, controlled situations, but rather, the ways research could inform how teachers may select instructional strategies based on personal experiences and other social aspect. Biesta (2007) found that educators simply knowing what worked (e.g., EBPs) could not replace the wisdom educators gained from experience and informed practice when determining what instructional methods would meet the specific needs of specific students. Teachers' cultural and moral values as well as their previous educational experiences and training were found to influence how EBPs were selected for use in public schools (Biesta, 2007). The author noted that knowledge of instructional practices was not an end product but rather an instrument for guiding “professional action” (Biesta 2007, p. 13) and that while

knowledge may provide some connections between the actions of teachers and the educational consequences for students, educational decision making frequently involved reaching conclusions based on need, judgment, and culture. Similarly, Cook et al. (2008b) noted that implementing effective teaching practices in special education required the professional insight and experience of educators skilled in recognizing student needs and in finding teaching methods designed to facilitate the learning process.

Limited studies (e.g., Boardman et al., 2005; Landrum et al., 2002) have addressed specifically how educators determine their educational practices. Elementary-level teachers were interviewed and surveyed by Boardman et al. (2005) about their familiarity with EBPs and how frequently EBPs were used during their instruction with students with disabilities. Landrum et al. (2002) surveyed general and special education teachers in order to discern their preferences for the ways in which information about instructional practices were disseminated. These studies did not address what influenced or motivated teachers to implement instructional strategies, and none included secondary-level special educators.

The Use of EBPs

Researchers and educators may share the goal of improving academic outcomes for students with disabilities (Cook & Cook, 2011), yet values and perspectives about how to reach that goal may differ significantly. Looking beyond student needs, the role of practitioners in the process of education has been considered and several studies were conducted to identify what influence practitioners have on the implementation of EBPs (Biesta, 2007, Cook & Cook, 2011; Slavin, 2008). Teacher education, moral and cultural

backgrounds, personal preferences, federal mandates, preservice teacher preparation and professional development provided by employers may influence whether or not EBPs are used to teach students with disabilities (Biesta, 2007, Cook & Cook, 2011; Slavin, 2008). Teacher willingness to implement EBPs with fidelity may also impact their use (Boardman et al., 2005). Slavin (2008) identified three requirements essential to implementing EBPs on a widespread basis: (a) rigorous reviews of promising instructional practices that can be used on a broad scale; (b) implementation of federal, state, and local policies designed to support promising innovations and provide ongoing evaluation; and (c) systematic reviews that translate research findings into language and formats accessible to educators and policymakers. Without these three requirements, Slavin (2008) stated that attempts to implement an evidence-based educational system would have limited success.

Responsiveness to the needs of students with disabilities. Beyond training and administrative requirements, meeting the needs of students with disabilities may be the most significant consideration when it comes to determining the use of EBPs. Boardman et al. (2005) conducted focus groups with elementary-level teachers of students with learning disabilities ($n = 30$) and teachers of students with emotional/behavior disorders ($n = 19$) to examine the teachers' perspectives about educational research and the extent to which they found research findings to be useful. The study addressed the ways in which new strategies were introduced within target teachers' schools and their reaction to the appropriateness of these strategies for students with special needs. The study revealed that teachers primarily selected instructional strategies based on the individual needs of

students and on personal experiences teaching and using specific techniques. These considerations were more significant compared to whether or not a practice was research based. Of the 49 teachers interviewed, 32 stated that they did not feel obligated to follow instructional plans or programs provided by their school districts, nor did they feel obligated to implement EBPs. The greatest consideration was given to meeting students' instructional needs using whatever methods they identified as best for the individual.

Research-to-practice gap. Despite training and mandates, awareness of the effectiveness of EBPs does not appear to increase the frequency of their use by educators (Cook et al., 2008b; Slavin, 2008). This discrepancy between awareness and implementation has come to be known as the research-to-practice gap (Carnine, 1997; McLeskey & Billingsley, 2008). Educational researchers and professionals have investigated this research-to-practice gap for more than 20 years and it continues to perplex them (Cook & Odom, 2013; Deschler, Ellis, & Lenz, 1996; Fuchs & Fuchs, 1996). The research-to-practice gap refers to the disproportional application of EBPs compared to the implementation of instructional strategies in educational settings (Cook, Smith, & Tankersley, 2012; Porter & McMaken, 2009).

An early study by Malouf and Schiller (1995) suggested three factors that influence the connection between research and practice: teacher knowledge and training, teacher attitudes and beliefs, and contextual factors. Teacher knowledge and training referred to the skills the teachers possess as well as the experience brought to the classroom. Attitudes and beliefs referred to personal feelings about the value of research and its role in classroom practice. Contextual factors were the many demands on teachers

within the classroom and the school setting, including lack of preparation time for lessons, administrative constraints such as class schedules, and curriculum requirements (Boardman et al., 2005; Malouf & Schiller, 1995).

Fidelity of use. Fidelity of use refers to the implementation of an EBP as it was designed. In order to expect EBPs to yield results similar to the research studies from which they originated, EBPs must be correctly implemented and provide similar exposure to the treatment, employ comparable materials, and provide similar length of time in treatment (CEC, 2014). If educators fail to implement EBPs with fidelity, it may indicate that they do not trust or understand the research supporting a strategy or simply do not have the necessary materials or administrative support required for proper implementation (Gersten, Vaughn, Deschler, & Schiller, 1997; Jitendra, 2005a; McLeskey & Billingsley, 2008). Failure to use EBPs may negatively impact the educational outcomes of students with disabilities; failure to use EBPs with fidelity may be equally troubling. Cook et al. (2003) found low rates of implementation of EBPs for students with emotional and behavioral disorders (EBD), indicating that many of the techniques known to be effective for students with EBD were not being used, and when used, were done so without fidelity, making them ineffective or even counterproductive. Failure to implement EBPs with fidelity may offer one explanation for special education's failure to produce greater positive educational outcomes (Morgan, Frisco, Farkas, & Hibel, 2010).

Implementation of Evidence-Based Practices

Biesta (2007) acknowledged the significance of practitioners in the educational process and suggested that simply having an awareness of the effectiveness of instructional strategies and EBPs did not equate to the ability to determine if an instructional strategy was appropriate to meet the educational needs of a specific student. He indicated that additional factors, including teacher preparation, professional development, and teachers' backgrounds may influence teachers when determining the methods used to instruct students.

Preservice preparation for special educators. The goal of teacher preparation classes for special educators should be to prepare them to implement the curriculum and standards of education publicly agreed upon for the benefit of students (Landrum & Tankersley, 2004). A review of teacher training programs found, however, that preservice special education teachers were infrequently taught how to discern research data and were rarely provided guidance in understanding research methods and interpreting findings (Brownell, Ross, Colón, & McCallum, 2005; Greenwood, 2001; Landrum & Tankersley, 2004). Preservice teachers were found to be frequently overwhelmed with academic reading, writing, student teaching, student observations, and other academic demands. Preparation for special educators did not provide training in identifying or implementing EBPs and preservice educators had very little exposure to educational research (Brownell et al., 2005). The lack of training and exposure to the use of educational research may preclude new teachers from seeking to consider EBPs in their instructional repertoires. Brownell et al. (2005) identified four components of high-

quality initial preparation for special education teachers: extensive coursework and field experiences, appropriate coursework in pedagogy for teaching content, high degree of coherence between coursework and fieldwork, and professional collaboration. Special educators may simply avoid using educational research due to a lack of experience and training (Carnine, 1997; Greenwood, 2001; Landrum et al., 2002).

Feng and Sass (2010) studied the teacher qualities that most impacted student achievement. Teacher experience, interpreted as the number of years special educators taught students with disabilities, was the primary trait that most significantly impacted student achievement (Feng & Sass, 2010). Academic gains for students receiving special education rose in relation to the experience of their teacher, with the largest gains from experience occurring early in a teacher's career, from their first through fifth years. Students in general education made no significant gains when their teachers held a postbaccalaureate degree, defined as a master's degree; students receiving special education, however, had higher achievement gains when their teacher held a master's degree (Klingner & Boardman, 2011; Nougaret, Scruggs, & Mastropieri, 2005). This may indicate that teachers learn to implement effective EBPs based on their personal experience versus preservice training or educational research.

Professional development. Public school districts typically require educators to participate in professional development sessions designed to indoctrinate them in specific preferred methods of instruction (Bryant, Linan-Thompson, Ugel, Hamff, & Hougen, 2001; Cook et al., 2008a). Gersten et al. (1997) described effective professional development as dynamic programs integrating organizational, systemic, and cultural

components designed to teach teachers how to implement EBPs. Professional development at the local level for both novice and seasoned teachers frequently did not provide the exposure, training, or practice needed to effectively implement specific EBPs (Cook et al., 2008a; Dingle, Brownell, Leko, Boardman, & Hagger, 2011).

Boardman et al. (2005) found that teachers criticized their district professional development for failing to support instructional techniques and failing to provide sufficient materials and other resources. Boardman et al. (2005) also identified teachers' lack of trust in the appropriateness of proposed EBPs and confidence in adapting EBPs into usable classroom strategies. The teachers noted a distinct disconnect between research and the realities of classroom instruction and indicated that they were more likely to trust their colleagues' suggestions for effective instruction compared to research studies. Lack of school-based support in the form of training and insufficient materials were cited as significant reasons to avoid implementing EBPs.

When principals conducted classroom observations with the purpose of seeing EBPs in action, teachers felt more accountable and, therefore, more encouraged to use EBPs (Dingle et al., 2011). Bryant et al. (2001) found that special and general education teachers working together on professional development projects wanted administrative support for their efforts to learn new EBPs, and teachers were more successful at implementing the strategies when they fit into their existing content.

Statement of Problem

EBPs are known to positively impact educational results for students with disabilities, yet it is unclear if secondary-level special education teachers use them

(Mesibov & Shea, 2011). It is also unclear how these educators determine the methods they use to instruct students with high-incidence disabilities (HID) as defined earlier. Just as students have strengths and weaknesses, educators also have varying degrees of teaching skills and experience. Educators must navigate federal mandates, district requirements, and student needs in order to actually teach students with disabilities (Dingle et al., 2011). For many special educators, using prescribed instructional methods and EBPs may go against their understanding of individualized instruction, and they may be influenced by internal and external factors—not research and EBPs—to guide their teaching practices (Burns & Ysseldyke, 2009; Cook & Odom, 2013). It is unclear from research how special education practitioners actually determine the strategies they use when teaching. This study examined what influenced secondary-level special education teachers when teaching secondary-level students with HID in the self-contained setting.

Background of Problem

Students with disabilities may struggle to succeed academically when taught with typical educational methods. EBPs implemented with fidelity have been found to improve academic results for students with learning differences. Some evidence suggests, however, that special education may have limited impact on improved educational outcomes for students with HID, although the reasons for this phenomenon may vary widely (Morgan et al., 2010; Sullivan & Bal, 2013). Morgan et al. (2010) followed a group of students with HID from elementary school through middle school to examine how special education impacted their academic progress. The researchers used control and experimental groups to examine the overall effectiveness of instruction for students

with and without disabilities. Results indicated that special education had a negative impact on reading skills and a statistically nonsignificant impact on mathematics skills. In addition, special education services had a statistically nonsignificant impact on the frequency of problem behaviors among students receiving special education (Morgan et al., 2010). The researchers found that overall, special education services did not improve student academic outcomes. The lack of appropriate and effective EBPs used consistently and with fidelity may have been one cause. Differences in teacher education, background, and experience may have also impacted student academic achievement.

Standardized testing presents difficulties for students with HID at the secondary level by the nature of the test formatting coupled with the demand for extensive reading and focus. These students generally achieved lower on nationally standardized tests compared to their nondisabled peers (College Board, 2009). On the Scholastic Aptitude Test (SAT) college admissions test, students with HID scored, on average, 17 points lower in reading and 29 points lower in math than their nondisabled peers (College Board, 2009). Students with HID were also less likely to graduate from high school than their nondisabled peers. For example, in the state of Ohio during the 2008-2009 school year, 83% of nondisabled students graduated from high school on time. In this one state, although the aggregate graduation rate for all students with HID was nearly the same (82.9%), specific groups of students with HID were much less likely to graduate (Ohio Department of Education, 2010). Most notably, only 63.2% of students with emotional or behavioral disabilities (EBD) graduated on time, while 85.8% of students with specific learning disabilities (SLD) graduated on time.

Looking beyond public education, postsecondary students with HID were at significantly greater risk for unemployment compared to their peers without disabilities. Data from the 2010 Bureau of Labor Statistics (BLS) reveals that 9.5% of the nondisabled population was unemployed, while 13.8% of the disabled population was unemployed (U.S. BLS, 2013). Similarly, the U.S. Census Bureau reported statistics from 2009 indicating 20.9% of people with disabilities were living in poverty compared to 12.1% of the entire population living in poverty. Historically, longitudinal studies of people with disabilities show less positive outcomes in employment, wages, postsecondary education, and residential independence than the general population (Blackorby & Wagner, 1996; Jones, 2009; McMahan & Baer, 2001; Phelps & Hanley-Maxwell, 1997). This consistent gap in positive outcomes between people with and without disabilities may indicate that special education practices have room for improvement or that effective special education practices may not consistently be employed in the special education. It may also indicate that other factors could be influencing how special educators actually teach.

Conceptual Framework

The conceptual framework for this study is a visual representation of the process special educators may go through prior to determining the instructional strategies they use in their classrooms (Figure 1), as based on the findings of Cook and Odom (2013), Detrich and Lewis (2012), and Mesibov and Shea (2011). The framework includes internal and external influences, indicative of the impact these may have in the development of instructional units and lessons as well as the selection of instructional

strategies. Internal (personal experiences and preferences) and external (years of education and mandated curriculum) influences, in addition to standardized testing requirements, and the best interests of students and teachers, may factor into the decision-making process resulting in effective instruction, as reflected in positive student outcome.

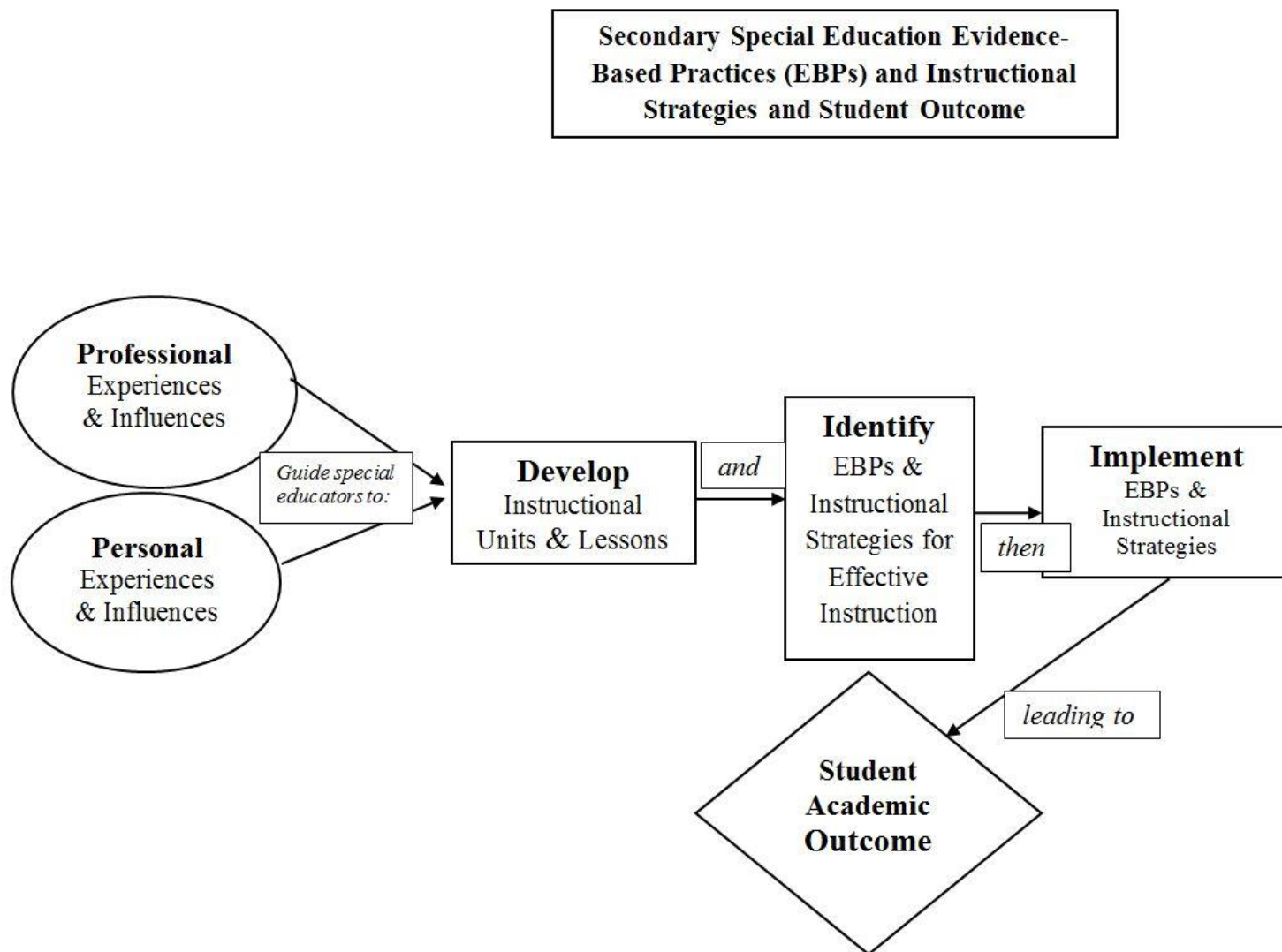


Figure 1. The impact of selecting instructional practices in secondary special education.

Purpose

The purpose of this study was to explore the variables that affect the selection and implementation of instructional strategies and EBPs by secondary-level special education teachers when working with HID students in the self-contained setting. This multicase study sought to identify whether education, experience, or other factors influenced the frequency and types of strategies secondary-level special educators selected for use with students with disabilities by utilizing background information, interviews, classroom observations, and a questionnaire.

Research Questions

The following research questions guided the current study.

1. What EBPs and instructional strategies do special education teachers at the beginning, midcareer, and senior levels state they use when teaching students with HID in the self-contained setting?
2. What EBPs and instructional strategies do special education teachers at the beginning, midcareer, and senior levels actually use when teaching students with HID in the self-contained setting?
3. What external and internal factors do special education secondary teachers at the beginning, midcareer, and senior levels state influence them when deciding which EBPs and instructional strategies they implement when teaching students with HID in the self-contained setting?

Summary

Implementing EBPs is significant to student success in special education because the use of EBPs results in improved student academic outcomes (Marzano, 2007; Mesibov & Shea, 2011). Following years of investigation and discussion, educational researchers have reached some consensus regarding what constitutes EBPs (Cook & Cook, 2011). Research with secondary-level teachers of students with disabilities and their use of EBPs, however, is lacking and it remains unclear what influences these teachers when they select instructional strategies and EBPs. Special educators may not actually be utilizing EBPs when teaching students with HID, thereby impacting the effectiveness of their instruction (Feng & Sass, 2010). Contributing factors may include limited exposure to and a lack of trust in educational research (e.g., Boardman et al., 2005), limited resources (e.g., Cook et al., 2008a), and directives from administrators within a nonsupportive school climate (Morgan et al., 2010). Understanding what influences educators could provide insight into the relationship between the use of EBPs and, ultimately, student academic outcome. There is a need for relevant research to examine secondary-level special education teachers' perceptions and use of EBPs when instructing students with HID in self-contained special education settings. In Chapter 2, the literature review will delve into several meta-analyses identifying specific EBPs and instructional strategies used with students with disabilities. Additionally, studies that focused on what influenced educators when selecting instructional strategies and EBPs in special education and their impact on student outcome will be reviewed.

Definition of Terms

Several terms are used to indicate the type of instruction provided by teachers to students with disabilities. Complete definitions follow but as used in this study, the term *evidence-based practice* refers to an instructional method that meets strict criteria based on empirically supported evidence. The term *instructional strategy* indicates that a practice has not been based on research evidence. EBPs may be instructional strategies, however, instructional strategies may not always be EBPs. Both are considered instructional methods. The following terms are used throughout this research in specific ways.

Evidence-based practice (EBP): An educational evidence-based practice is an instructional strategy, intervention, or teaching program based on empirically supported evidence that has resulted in consistent positive results when experimentally tested (Mesibov & Shea, 2011).

High-incidence disability (HID): HID refers to the disabilities identified most frequently among students in public education (approximately 75% of students with disabilities have high incidence disabilities) and includes students with specific learning disabilities (SLD), emotional and/or behavioral disabilities (EBD), mild intellectual disability (MID), and other health impaired (OHI) (IDEA, 2004; Gage, Lierheimer, & Goran, 2012).

Individuals with Disabilities Education Act (IDEA) 2004: This act requires that schools provide accountability of research-based practices and effective instruction for students with special needs.

Instructional strategy: Instructional strategies are methods used in teaching to help students learn. Instructional strategies are the approaches a teacher takes to engage students in learning, probe critical thinking skills, keep them on task, engender sustained and useful classroom interaction, and enable and enhance their learning of course content, but are not always based on research (Mitchell, 2007).

No Child Left Behind Act (NCLB) of 2001: This extensive federal act requires general and special education teachers to be certified as “highly qualified” in their field of instruction, in addition to numerous other mandates.

Research-to-practice gap: The phrase describes the lack of translation of research to practice in the special education classroom (Carnine, 1997; McLeskey & Billingsley, 2008).

Chapter 2: Literature Review

The purpose of the literature review is to provide a systematic summary of research pertaining to EBPs, instructional strategies, and teacher decision making when determining how to teach students with high-incidence disabilities. The chapter begins with summaries of meta-analyses of EBPs and instructional strategies followed by a review of research literature pertaining to the decision-making process educators go through in order to design their instruction. Finally, a rationale for the current study is provided.

Literature Search Procedures

Computer-assisted searches for applicable literature were completed utilizing Academic Search Complete (EBSCO), APA PsychNET (including APA PsychINFO), ProQuest, and Education Resources Information Center (ERIC) databases using various combinations of the following descriptors: students with disabilities, special education, EBPs, instructional strategies, instructional practices, instructional interventions, educators, interventions, meta-analysis, and research synthesis. Finally, ancestral searches of literature reviews and meta-analyses were completed.

Studies were included in this review if they were published in a peer-reviewed journal between the years 2000 through 2015, had dependent measures that evaluated the effectiveness of an intervention, and included students in Grades K-12 identified with

high-incidence disabilities. Studies that examined the effectiveness of instructional strategies in specific areas, including reading, math, and peer tutoring, were included as were studies with broader analyses focused on academic, social, and cognitive interventions.

Excluded were studies that focused on students with hearing or visual impairments, speech and language disorders, and studies addressing bullying or social/emotional interventions unrelated to improving academic standings. Also excluded were studies addressing interventions designed for postsecondary students and studies that did not disaggregate data for general and special education students. Meta-analyses which included data extracted from dissertations, newsletters, and other nonpeer reviewed sources were also excluded. These criteria for including and excluding studies follow the guidelines established by Berkeley, Scruggs, and Mastropieri (2010) when they conducted a meta-analysis focused on reading comprehension instruction for students with learning disabilities.

The search produced 132 meta-analyses of which 10 met the criteria for inclusion in this review. The studies were published in six journals including *Review of Educational Research*, *Learning Disability Research and Practice*, *Remedial and Special Education*, *Learning Disability Quarterly*, *Reading Improvement*, and *School Psychology Review*. The following sections identify instructional strategies developed to help improve the academic outcomes of students with disabilities in specific areas, including reading, math, and social skills.

Reading

Five meta-analyses addressed the efficacy of instructional strategies with the goal of improving reading skills for students with disabilities. One meta-analysis focused exclusively on older students in Grades 5-9 (Flynn, Zheng, & Swanson, 2012) while another extended earlier research for struggling readers in Grades K-3 to students with reading disabilities in Grades 4-12 (Wanzek et al., 2013). Two meta-analyses focused exclusively on reading comprehension (Berkeley et al., 2010; Sencibaugh, 2007) and one article focused on a combination of reading fluency and comprehension (Therrien, 2004).

Grades 5-9. Instructional strategies based on norm-referenced measures and designed to improve reading skills for students in upper elementary and middle schools were synthesized by Flynn et al. (2012). The authors focused on studies published between 1960 and 2009 and analyzed 10 studies meeting their inclusion criteria of an EBP (pretest/posttest design) using norm-referenced reading measures for students with reading disabilities. The studies also included the treatment group receiving instruction beyond their typical classroom instruction, participants in Grades 5-9 and in the 9-15 years age range, and quantitative information in order to calculate effect sizes (ES). Additionally, treatment variables were sorted using 18 instructional procedures and strategies originally identified by Swanson and Hoskyn (1998):

- Advanced organizers (students directed to focus on particular information and/or the teacher stating objectives of instruction)
- Attributions (teacher presenting benefits of taught strategies)

- Control difficulty or processing demands of tasks (probing learning, level of difficulty controlled, teacher providing necessary assistance)
- Elaboration (additional information or explanation provided)
- Explicit practice (repeated practice, sequenced reviews, daily feedback, and/or weekly reviews)
- Large group learning (instruction in large groups and/or teacher-only demonstrations)
- New content/skills (new curriculum or new material presented)
- One-on-one instruction (individually tailored instruction, independent practice, tutoring)
- Peer modeling (peers presenting or modeling instruction)
- Questioning (students directed to ask questions, teacher/student dialogue, and/or teacher asking questions)
- Reinforcement (intermittent or consistent use of rewards and reinforcers)
- Sequencing (breaking down the task and/or sequencing short activities)
- Skill modeling (modeling from a teacher in terms of skills)
- Small-group instruction (instruction/verbal interaction in a small group with students and/or teacher)
- Strategy cues (reminders to use strategies, solve problems, or use “think aloud models”)
- Supplement to teacher involvement (homework and/or parents helping to reinforce instruction)

- Task reduction (breaking down the skill into smaller units and/or task analysis), and
- Technology (using specific media or computers to facilitate presentation and/or feedback).

Effect sizes were calculated using Hedge's g as the difference between pretest/posttest means for the treatment group and pretest/posttest means for the control group on both norm-referenced and experimental measures. Results showed that based on Cohen's (1988) standards for effect size, the overall magnitude of treatment outcomes across reading interventions for student results based on norm-referenced reading measures was small. Comparisons of the effect sizes (ESs) of specific interventions were difficult to compute because many studies combined EBPs and instructional strategies. The authors noted, however, that the study with the lowest ES overall and the study with the lowest of the moderate ESs both used the highest number of instructional components within their strategies which may indicate that when working with older struggling readers, a limited number of interventions should be introduced and used one at a time, with a direct focus on improving specific skills. The study producing the largest effect size included an element for identifying students' specific reading disabilities, indicating that interventions should be targeted toward specific difficulties. Flynn et al. (2012) also found that the proportion of variance in reading performance accounted for by phonics instruction while using instructional strategies was small, indicating that while effective for young readers, phonics instruction may not be as effective for older students. The authors concluded that since research identifying instructional strategies in reading for

students with disabilities was limited; research should be continued with the goal of informing educators about the most effective reading instructional strategies in five areas of reading: phonemic awareness, phonics, fluency, vocabulary, and comprehension.

Grades 4-12. Wanzek et al. (2013) sought to identify the effectiveness of interventions for improving reading outcomes of students at the upper elementary to high school levels. The researchers focused on studies published in English in peer-reviewed journals between 1995 and 2011 that included participants with identified learning disabilities or reading difficulties. Students were enrolled in Grades 4 through 12 (ages 10-18) and received instruction targeting intervention strategies for reading as part of their school day program in an alphabetic language. Dependent variables addressed reading outcomes and the research designs were experimental, quasi-experimental, single group, or single-case studies. A total of 19 studies met their criteria from an initial field of 24,720 studies with 9,371 students making up the total sample size. The majority of students were in Grades 6 through 8, and no studies included students in Grades 10 through 12.

Effect sizes were calculated using Hedge's g by comparing the mean and standard deviations for treatment and control groups. In some cases, Cohen's d was reported and the treatment and control group sample sizes were used to calculate Hedge's g . Effect sizes from the meta-analysis studies based on interventions targeting reading comprehension, reading fluency, word reading, word reading fluency, spelling, and publication bias were as follows.

Reading comprehension outcomes. Twenty-two reading comprehension effects were used in the analysis to calculate the mean effect size for instructional strategies designed to improve student comprehension levels. The estimate of the effect size was 0.10 ($p < .001$; 95% confidence interval [CI] [0.06, 0.19]), indicating a small positive effect on students' reading comprehension. No statistically significant differences were found between groups based on any moderator variable such as group size, number of hours of intervention, or grade level of intervention.

Reading fluency outcomes. The mean effect size estimate for the nine effect sizes from fluency outcome measures was 0.16 ($p = .004$; 95% CI [0.05, 0.26]), indicating a small positive effect of strategies on students' reading fluency ability. The variance associated with the effect sizes was not statistically significant ($Q = 5.03$, $p = 0.76$).

Word reading outcomes. Twelve effect sizes from word reading outcomes had a mean effect size of 0.15 ($p = .003$; 95% CI [0.05, 0.24]), indicating a small positive effect size on students' word reading outcomes. The variance was not statistically significant ($Q = 9.78$, $p = 0.55$).

Word reading fluency outcomes. The 11 effect sizes from word reading fluency had a mean effect size of 0.16 ($p = .001$; 95% CI [0.06, 0.26]), indicating a small positive effect on students' word reading fluency ability. The variance was not statistically significant ($Q = 3.70$, $p = 0.96$).

Spelling outcomes. The mean effect size estimate for the five spelling outcome measures was 0.15 ($p = .014$; 95% CI [0.03, 0.27]), indicating a small positive effect on

students' spelling ability. The variance was not statistically significant ($Q = 4.00, p = 0.406$).

Publication bias. Publication bias was based on a trim-and-fill analysis, an iterative process designed to correct asymmetry in a funnel plot of effect sizes resulting from omission of nonpublished studies that found a null result and a very small effect size. Results indicated that publication bias did not affect the mean effect size estimates for comprehension, reading fluency, and word reading fluency outcome measures meta-analyses. Evidence of publication bias was found for the spelling and word reading outcome measures due to a small number of available effect sizes. Word reading effect size was 0.10 (95% CI [-0.01, 0.21]). For spelling measures, the estimated effect size was 0.11 (95% CI [-0.01, 0.23]). After adjustment for publication bias, the confidence intervals for word reading and spelling measures include zero, indicating that it was possible that extensive use of interventions had no effect on performance in these areas.

The synthesis by Wanzek et al. (2013) indicated that extensive use instructional strategies for students with reading disabilities or difficulties may yield a positive, albeit small, effect on a variety of reading outcomes and confirmed the value of continuing the use of instructional strategies for students beyond the third grade. Flynn et al. (2012) found that combined interventions for students in Grades 5-8 produced positive effects for students' outcomes on norm-referenced tests and both syntheses indicated the need for a continuation of high-quality, experimental research for older students with reading disabilities.

Reading comprehension. Two meta-analyses were reviewed in this section beginning with Berkeley et al. (2010) and concluding with Sencibaugh (2007). Berkeley et al. (2010) synthesized 40 studies published between 1995 and 2006 which focused on improving reading comprehension for students with learning disabilities (LD). Instructional strategies were classified as fundamental reading skills instruction, text enhancements, and questioning/strategy instruction, including studies that incorporated peer-mediated instruction and self-regulation. The purpose of the meta-analysis was to determine if outcomes were comparable to an earlier reading comprehension instructional research conducted by Mastropieri, Scruggs, Bakken, and Whedon (1996).

Forty studies were included with the most prevalent design being experimental with random assignment of participants to conditions (52.5%) followed by quasi-experimental designs with matching or nonrandom assignment (40%), and pretest designs with the pretest as a comparison (7.5%). Participants were in Grades K-12 and interventions were designed to improve reading comprehension outcomes for students with learning disabilities. Studies were included if data was sufficient to calculate an effect size, and were published in English in professional, peer-reviewed journals. In order to maintain similar effect size values, effect sizes were calculated separately for criterion-referenced and norm-referenced measures and for treatment, maintenance, and generalization measures. The overall weighted effect size for criterion-referenced measures was 0.69 for treatment effects, 0.69 for maintenance effects, and 0.75 for generalization effects ($M = 0.70$ across all criterion-referenced measures). For norm-

referenced tests, the mean effect size was 0.52 for treatment effects. Instructional strategies were categorized into the following topics.

- Questioning/strategy instruction included direct questioning of students, students directed by teachers to ask questions, teacher/student dialogue, and student self-questioning techniques.
- Text enhancements included in-text questioning, graphic organizers, technology, and video vocabulary instruction for text enhancement.
- Fundamental reading skills included packaged intervention programs and had very low student-to-teacher ratios during implementation.
- Other interventions included a school-wide cooperative learning program and an evaluation of a program with multiple components.

Results from this synthesis indicate that several instructional strategies were effective in improving reading comprehension for students with LD and could be further identified as EBPs. For criterion-referenced measures, questioning/strategy instruction and text enhancements had mean weighted effect sizes that were moderate to large in magnitude. The overall effect for fundamental reading skills was large and a small effect was noted for “other” interventions. Outcomes by intervention type were not statistically different based on a homogeneity test, $Q(1, N = 28) = 0.60, p = .71$.

For norm-referenced tests, high effect sizes were noted with fundamental reading skills instruction, followed by questioning/strategy instruction, and text enhancements. The differences were not statistically significant based on a homogeneity test, $Q(2, N = 14) = 2.71, p = .40$. The authors compared effect sizes for instructional variables based on

treatment delivery agents, grade levels, setting, type of reading passage, duration of treatment, classroom peers, self-regulation, and other variables. Studies that included results from researcher-implemented treatments resulted in higher effect sizes compared to treatments implemented by teachers or other school staff.

Overall mean weighted effect sizes for criterion-referenced measures were as follows: 0.69 for treatment effects, 0.69 for maintenance effects, and 0.75 for generalization effects. For norm-referenced measures, the mean effect size was 0.52 for treatment effects. The results indicated that interventions that structured cognitive strategies were effective and comparable to other types of interventions such as text enhancement. Peer-mediation and self-regulation did not produce a significant effect on student outcomes. In general, interventions directing students to attend more carefully to the material being read and to think more systematically while reading improved students' abilities to construct meaning from text.

Berkeley et al. (2010) concluded by stating that while empirical evidence showing that a variety of instructional strategies designed to improve student reading comprehension were available for use with students with reading disabilities, few were actually implemented in inclusive classes. The authors suggested that instructional strategies are of little use if they are not used systematically and with fidelity when working with students with disabilities. The authors anticipated that future research may help identify why researcher-implemented interventions resulted in higher effect sizes compared to teacher-implemented instructional strategies.

The second meta-analysis of research studies was conducted by Sencibaugh (2007) and published between 1985 and 2005. This meta-analysis focused on reading comprehension strategies for students with learning disabilities in Grades K-12. Additional criteria for inclusion included experimental design and quantitative information allowing calculation of effect size as well as publication in English in peer-reviewed journals. Fifteen studies were included that identified 23 separate instructional strategies categorized as either visually dependent (including the use of pictures or visual ability activities) or auditory/language dependent (including summarization techniques, self-questioning, story retelling, and collaborative strategic reading strategies). All of the studies used group designs, including treatment-comparison design ($n = 9$) or a single-group design with multiple treatments ($n = 6$). The effect size for studies was calculated on treatment-comparison studies by taking the difference between the intervention group's mean score and the comparison group's mean score and dividing by the comparison group's standard deviation.

The difference between the mean experimental gain and the mean comparison gain was divided by the standard deviation of gain of the comparison group when pre- to posttest gains in the mean scores of the two groups were compared. Cohen's (1988) guidelines for effect sizes were used with 0.20 indicating a small effect size, 0.50 indicating a medium effect size, and 0.80 indicating a large or significant effect size. The mean effect size for visually dependent strategies was Delta Δ 0.94 with a 90% CI of (0.55, 1.33). The mean effect size for auditory/language dependent strategies was Delta Δ 1.18 with a 90% CI of (0.88, 1.48). Both effect sizes were considered significant,

indicating that for students with learning disabilities, instructional strategies designed to improve reading comprehension levels were effective supplements to traditional instruction. The findings also indicated that auditory/language dependent strategies had a greater impact on reading comprehension skills of students with LD when compared to visually dependent strategies. Two specific strategies yielded the most significant outcomes: questioning strategies involving self-instruction and paragraph restatements (Δ 3.65) and text-structure-based strategies (Δ 2.39).

Sencibaugh (2007) concluded by describing the benefits of teaching students with disabilities how to help themselves by using cognitive strategies to improve their reading comprehension as well as noting the responsibility for teachers to train students to use these metacognitive strategies. The author went on to state that preservice candidates should be taught how to effectively implement them when teaching students with disabilities and that teachers should recognize the value of empirical evidence and research when designing instruction to improve student reading comprehension.

Combined fluency and reading comprehension. Therrien (2004) conducted a meta-analysis examining instructional strategies designed to increase reading fluency and improve reading comprehension for students with disabilities. Fluency is described as the ability to read with speed and accuracy (Samuels, 1979). The specific fluency strategy of repeated reading was examined for effectiveness among students in Grades K-12, ages 5-18. Repeated reading was described as a program that consists of reading and re-reading a short and meaningful passage until a satisfactory level of fluency was achieved (Samuels, 1979). Experimental, quantitative studies published in peer-reviewed journals

between 1977 and 2001 were reviewed for consideration. Studies were scrutinized for available data appropriate for determining effect sizes. Eighteen studies were included in the analysis and effect sizes were based on differences between pretest and posttest scores. Fluency measures were operationalized as number of correct words per minute or reading speed. Comprehension measures were operationalized as either story retell measures or comprehension questions. Effect sizes were categorized as nontransfer measures (the measure of students' ability to fluently read or comprehend the same passage after reading it multiple times) or transfer measures (the measure of students' ability to fluently read or comprehend a new passage after having read different passages multiple times) and effect sizes were analyzed separately.

Nontransfer measures. Across all nontransfer measures, the mean fluency ES increase was .83 ($SE = .066$) and mean comprehension ES increase was .67 ($SE = .080$). Nontransfer strategies included students reading aloud to an adult with cued reading, corrective feedback, and performance criteria.

Cued reading. Students cued to focus on speed obtained a mean fluency ES of .72 ($SE = .185$) and a mean comprehension ES of .66 ($SE = .197$). Students cued to focus on comprehension obtained a mean fluency ES of .81 ($SE = .096$) and a mean comprehension ES of .75 ($SE = .127$). Students cued to focus on a combination of fluency and comprehension obtained a mean fluency ES of .94 ($SE = .135$) and a mean comprehension ES of .67 ($SE = .136$).

Corrective feedback. Mispronunciations were corrected when they occurred or when students needed assistance. Students who received corrective feedback obtained a

mean fluency ES of .68 ($SE = .119$) and students who did not receive corrective feedback obtained a mean fluency ES of .88 ($SE = .075$).

Performance criteria. A fixed number of readings was used as the performance criteria for determining nontransfer effect sizes. Overall, these interventions obtained a mean fluency ES of .81 ($SE = .066$) and a mean comprehension ES of .66 ($SE = .08$).

Transfer measures. Components were analyzed based on six components: adult or peer instructor, modeling, corrective feedback, performance criteria, comprehension, and charting.

Adult or peer instructor. Students receiving interventions conducted by adults obtained a mean fluency ES of 1.37 ($SE = .177$) and a mean comprehension ES of .71 ($SE = .265$). Students receiving interventions conducted by peers obtained a mean fluency ES of .36 ($SE = .062$) and a mean comprehension ES of .22 ($SE = .070$).

Modeling. Modeling consisted of a peer tutor reading aloud a passage to another student. Strategies that included modeling obtained a mean fluency ES of .40 ($SE = .077$) and a mean comprehension ES of .10 ($SE = .104$).

Corrective feedback. Mispronunciations were corrected when they occurred or when students needed assistance. Students who received corrective feedback obtained a mean fluency ES of .51 ($SE = .06$) and a mean comprehension ES of .23 ($SE = .07$). Students who did not receive corrective feedback obtained a mean fluency ES of .46 ($SE = .227$) and a mean comprehension ES of .52 ($SE = .234$). When corrective feedback instructional strategies conducted by peers were excluded, interventions that provided corrective feedback obtained a mean fluency ES of 1.37 ($SE = .177$).

Performance criteria. A fixed number of readings was used as the performance criteria for determining nontransfer effect sizes. Overall, these interventions that used a performance criterion obtained a mean fluency ES of 1.70 ($SE = .188$). Strategies that used a fixed number of readings obtained a mean fluency ES of .38 ($SE = .061$).

Comprehension component. Students were asked to respond to comprehension questions or complete a paragraph summary during peer-administered interventions. Those that included a comprehension component obtained a mean fluency ES of .39 ($SE = .084$) and a mean comprehension ES of .28 ($SE = .092$).

Charting. Monitoring and charting student progress as an instructional strategy obtained a mean fluency ES of .11 ($SE = .075$). Without charting, the instructional strategies resulted in a mean fluency ES of .40 ($SE = .091$) and a mean comprehension ES of .44 ($SE = .105$). Teacher or other adult-implemented interventions that charted student progress obtained a mean fluency ES of 1.58 ($SE = .208$).

When students with disabilities were compared with students without disabilities, interventions designed to increase fluency and comprehension with repeated reading produced the following results. For nontransfer measures, the mean fluency ES for students without disabilities was .85 ($SE = .075$), and the mean comprehension ES was .64 ($SE = .094$). The mean fluency ES for students with LD was .75 ($SE = .161$), and the mean comprehension ES was .73 ($SE = .152$).

For transfer measures, the mean fluency ES for students without disabilities was .59 ($SE = .11$), and the mean comprehension ES was .18 ($SE = .126$). The mean fluency

ES for students with LD was .79 ($SE = .124$), and the mean comprehension ES was .41 ($SE = .173$).

Therrien (2004) noted that based on this analysis of reading fluency and comprehension studies, repeated reading improved the reading fluency and comprehension of students with and without learning disabilities. Effect sizes across all nontransfer studies indicated a large positive effect on reading fluency ($ES = .83$, $SE = .066$) with a moderate effect size for reading comprehension ($ES = .67$, $SE = .080$). Transfer results achieved a moderate effect on reading fluency ($ES = .50$, $SE = .058$) and a smaller mean comprehension effect size ($ES = .25$, $SE = .067$). When interventions were provided by adults only versus peer-administration, the mean fluency effect size was large ($ES = 1.37$, $SE = .177$) and the mean comprehension effect size was moderate ($ES = .71$, $SE = .265$).

Based on these results, repeated reading as an instructional strategy showed the potential to improve students' overall reading fluency and comprehension when using new reading material. Additionally, all repeated reading instructional strategies achieved better results when administered by an adult versus a peer tutor. Implications are that students improved their overall reading fluency and comprehension when working with an adult, when provided cues, corrective feedback, and when passages were read repeatedly until a performance criterion was achieved.

Math

Two meta-analyses addressed the efficacy of instructional strategies with the goal of improving math skills for students with disabilities. The first meta-analysis by

Kroesbergen and Van Luit (2003) focused on instructional strategies for three mathematic domains including preparatory mathematics, basic skills, and problem-solving strategies. The second study by Zheng, Flynn, and Swanson (2013) focused on instructional strategies for word problem difficulties. Students with math disabilities generally have memory deficits leading to difficulty when acquiring and recalling math information (Zheng et al., 2013). Generalization of skills and transference of learned knowledge often prove difficult for these students.

In the first meta-analysis, Kroesbergen and Van Luit (2003) consolidated the results of 58 studies of strategies designed to improve mathematic skills for elementary students with learning disabilities that would help them acquire the math knowledge and skills needed to demonstrate an improvement in overall math abilities. Three specific domains were considered: preparatory mathematics, basic skills, and problem-solving strategies. Preparatory math skills referred to the development of number sense, number conservation, item classification, counting skills and seriation. Basic math skills were considered to be addition, subtraction, multiplication, and division and the acquisition and automatization of these basic skills. Problem-solving skills included the application of previously learned information and skills when solving verbal and nonverbal problems.

Kroesbergen and Van Luit (2003) searched empirical studies published in English in peer-reviewed journals between 1985 and 2000. All studies used either an experimental and a control condition or a repeated-measures design with data available to calculate effect sizes. Cohen's d was calculated by dividing the difference between the

scores for the control groups and experimental groups at posttest by the pooled standard deviation. For studies using a repeated-measures design, the baseline scores were treated as control scores and then subtracted from the treatment mean score.

Individual study results were reported; however, overall effect size comparisons were limited due to a high number of variables and small *Ns* for several categories. The single variable analyses showed that several variables had a significant influence on the study outcomes, but only four variables were found to explain a significant part of the variance in the effect sizes for all studies considered together. The instructional strategies in the domain of basic skills produced the highest effect sizes and the authors speculated that it may be easier to teach basic skills to students with math disabilities compared to teaching problem-solving skills.

Studies using a single-subject design produced the highest effect sizes for pretest-posttest comparisons, based on the assumption that frequency and familiarity with the testing influenced overall performance. No differences were found for students with different special needs, but interventions for students with mild intellectual disabilities were consistently more effective than for students with learning disabilities. For students with LD, the duration of the interventions negatively correlated with effect size, possibly due to numerous interacting variables.

Kroesbergen and Van Luit (2003) found instructional strategies that included self-instruction were most effective for teaching problem-solving skills. For learning basic skills, direct instruction with an adult proved to be most effective. Using technology as an aid for instruction produced lower effect sizes than other interventions and suggested that

the computer is less effective compared to a teacher providing direct instruction. Strategies utilizing peer tutors were less effective compared to other interventions, indicating that for students with disabilities, group work is not highly effective.

In the second study, Flynn et al. (2012) synthesized 15 studies focused on word problem solving strategies for students ages 5-18 with math disabilities (MD). Studies from 1986 to 2009 from peer-reviewed publications were considered for inclusion. Seven group studies and eight single-subject design studies met the authors' inclusion criteria. Studies were either pretest/posttest design with a control group with quantitative data in order to calculate effect sizes or single-subject design using multiple baselines, changing criterion, or alternative treatment designs. Solution accuracy was the primary dependent measure coded on word problems while computation skills, concept understanding, and labeling were secondary considerations. Instructional components in studies were coded based on those established by Swanson and Hoskyn (2001) (see above in Flynn et al., 2012). Pretest posttest means and posttest standard deviations were used to compute effect sizes with Hedge's g as the measure.

The interventions identified in the studies used the following instructional components: sequencing, task reduction, advanced organizers, questioning, elaboration, strategy cues, and skill modeling. Approximately 50% of studies took place in small group settings with 3-5 students. The authors noted two significant findings for studies using the pretest/posttest design. When students with MD-only were compared with students with MD-only in the control group, the ESs for solution accuracy produced high outcomes with a mean ES of 0.95. The effect sizes were substantially lower, however, for

students with math disabilities with comorbid deficits for solution accuracy, $M = -0.45$. Additionally, those studies yielding the highest ESs incorporated the following instructional strategies: sequencing, explicit practice, task reduction, advanced organizers, questioning, task difficulty control, elaboration, skill modeling, strategy cues, and small-group instruction.

For the single-subject studies, the average ES across 19 participants was 0.90, with a standard deviation of 0.82. All instructional strategies were focused on solving word problems involving multiple math operations. Data for all participants were used to calculate the percentage of all nonoverlapping data (PAND) (Parker, Hagan-Burke, & Vannest, 2007), determined by subtracting the percentage of overlapping data from 100%, dividing the result by 2, and subtracting 1 from the total. The result was converted to Cohen's d and a value of 2.91 was obtained, indicating a large treatment effect.

Results of the meta-analysis by Flynn et al. (2012) indicated that explicit instruction was effective for students with MD and, combined with specific interventions, resulted in increased ESs. Peer-assisted instruction failed to benefit students with MD; instructional strategies worked more effectively for students with MD-only when compared to students with MD and reading disabilities (RD). The general pattern for group design and single-subject design studies showed that reading skills moderated the magnitude of ESs. For single-subject studies, the ES for students with MD-only yielded a mean ES of 1.45 while students with MD and RD yielded 0.58 relative to the baseline condition. Flynn et al. (2012) concluded that the magnitude of interventions for students with MD when solving word problems varied based on students' reading abilities.

Kroesbergen and Van Luit (2003) and Flynn et al. (2012) identified instructional strategies for students with MD and noted that they were most effective for students struggling with basic math skills versus problem-solving difficulties. The authors of both meta-analyses concluded that this may be due to overall variances in reading abilities. Peer-assisted instruction was ineffective for students with disabilities while direct-explicit instruction provided by an adult was most effective.

Peer Tutoring

One meta-analysis focused on peer tutoring, commonly defined as an instructional strategy enlisting students helping other students to learn content through the repetition of key concepts (Bowman-Perrot et al., 2013). Bowman-Perrot et al. (2013) identified 17 studies published in peer-reviewed journals between the years 1966 and 2011 meeting their criteria for inclusion. Studies including students from Grades 1-12 were considered for inclusion. All studies used a single-case research design with baseline conditions that did not include any form of peer tutoring. Studies also met the stringent requirements of being “strong single-case designs” (Horner et al., 2005) indicating that (a) the peer tutoring instructional strategy was systematically implemented, (b) all variables achieved inter-observer agreement of at least 80%, (c) studies demonstrated experimental control with at least three demonstrations of the instructional strategy effect at three points in time, and (d) phases had a minimum of three data points.

Studies were identified across five variables: grade level, dosage, use of rewards, disability status, and content area. TauU was utilized to calculate ES based on nonoverlap between phases that can also control for confounding baseline trends (Parker, Vannest, &

Davis, 2011). TauU incorporates A versus B phase nonoverlap, nonoverlap, and Phase B trend together, nonoverlap with baseline trend controlled, and nonoverlap and Phase B trend with baseline trend controlled.

Results indicated that the overall effect of peer tutoring yielded a mean ES of 0.75 ($SE = 0.02$, CI 95% = 0.71 to 0.78). Peer tutoring was slightly more effective for middle and high school students ($ES = 0.74$, $SE = 0.04$, CI 95% = 0.66 to 0.81) when compared to results for elementary school students ($ES = 0.69$, $SE = 0.02$, CI 95% = 0.66 to 0.74). Studies using rewards had a higher effect size ($ES = 0.75$, $SE = 0.02$, CI 95% = 0.71 to 0.79) compared to those that did not use rewards ($ES = 0.69$, $SE = 0.03$, CI 95% = 0.63 to 0.73). Overall, middle and high school students benefited more from the use of rewards ($ES = 0.83$, $SE = 0.08$, CI 95% = 0.68 to 0.98) compared to the use of rewards for elementary school students ($ES = 0.70$, $SE = 0.03$, CI 95% = 0.65 to 0.75).

The limitations of this study include the exclusive use of single-case design studies and a small number of studies included in the meta-analysis. Also, comparing TauU to Cohen's d effect sizes results in an approximation only. Bowman-Perrott et al. (2013) noted that fidelity of implementation could not be fully validated and may have influenced ES results. Despite these limitations, the authors describe peer tutoring as an effective "EBP based on the most current, high-quality standards for single-case research" (p. 52) which should be included in teacher-training programs. These findings are in contrast to those of Kroesbergen and Van Luit (2003) and Flynn et al. (2012) for math interventions and Berkeley et al. (2010) and Therrien (2004) for reading interventions. Kroesbergen and Van Luit (2003) found that math strategies implemented

by peer tutors were less effective than other interventions for students with disabilities and group work was not highly effective. Flynn et al. (2012) found that peer-assisted instruction failed to benefit students with math disabilities and was only slightly more effective for students with MD-only when compared to students with MD and reading disabilities (RD). Berkeley et al. (2010) found that peer-mediation and self-regulation did not produce a significant effect on student reading outcomes, while Therrien (2004) concluded that all repeated reading interventions achieved better results when administered by an adult versus a peer tutor.

Academic, Social, or Cognitive Interventions

Two meta-analyses discussed in this section reviewed interventions for secondary students with learning disabilities. The first meta-analysis conducted by Swanson and Hoskyn (2001) focused on identifying strategies for secondary students with learning disabilities in reading. The second meta-analysis by Scruggs, Mastropieri, Berkeley, and Graetz (2010a) synthesized the literature from 1984 to 2010 about instructional strategies in the content areas at the secondary level for students with high incidence disabilities. Swanson and Hoskyn (2001) conducted a meta-analysis of studies published between 1963 and 1997 whose focus was on identifying strategies for secondary students with learning disabilities in reading, including comprehension and vocabulary instruction, mathematics, writing/spelling, and cognitive processing. Instructional components for study analysis were previously established in Swanson and Hoskyn (1998) (see above in Flynn et al., 2012). Of the 18 instructional components identified by the authors, eight were identified most frequently in intervention programs for students at the secondary

level: questioning, sequencing and segmentation, explicit skill modeling, organization and explicit practice, small-group setting, indirect-teacher activities, technology, and scaffolding. Only studies using an experimental design in which students ages 10 to 19 years with LD were taught using strategies designed to improve their academic, social, and/or cognitive performance were considered. Ninety-three studies were included in this meta-analysis, and Cohen's d was the index of effect size (the difference between control and experimental treatment posttest mean scores divided by the average standard deviation). Effect sizes were averaged within each study followed by an aggregated mean across all studies. The mean ES across all studies was 0.80 ($SD = 0.57$; range 0.11 to 2.76). Forty-four percent of dependent measures focused on interventions in reading, including comprehension and vocabulary instruction. Results for mathematics were 8.3%, writing/spelling (25.9%) and cognitive processing (11.6%).

Swanson and Hoskyn (2001) concluded that instructional strategies produced positive ESs for students with LD, and two specific instructional components contributed the greatest proportion of positive outcome. Organization and explicit practice were found to contribute the most variance (16%) to ESs and specifically included advanced organizers providing scaffolding designed to help students access information they had previously learned. These instructional strategies also provided statements about the subject being studied, giving structure to new information so that it could be mentally stored and later retrieved. Explicit practice provided the opportunity for students to practice what they were learning at various stages of the instructional process. The study results indicated that long-term retention of learned information is greatly enhanced by

explicit and distributed practice for adolescents with learning disabilities and should be routinely integrated into instruction for students with LD.

A meta-analysis conducted by Scruggs et al. (2010a) synthesized the literature from 1984 to 2010 about instructional strategies in the content areas at the secondary level for students with high incidence disabilities. Seventy studies were included with the majority of instructional strategies based in the science or social studies content areas, or a combination of the two. Standardized mean-difference effect sizes were calculated using Hedge's *g*, whereby each effect size was weighted by the reciprocal of its error variance (Scruggs et al., 2010a). The overall effect size was 1.00, indicating an overall large effect across studies. Table 1 lists the most prevalent instructional strategies and those identified as most effective.

Table 1

Instructional Interventions at the Secondary Level in Scruggs, Mastropieri, Berkeley, and Graetz (2010a)

Strategy	Prevalence in Studies	Effectiveness	Mean Effect Size
Mnemonic Strategies	30.0%	Highly effective	1.47
Spatial Organizers	20.0%	Effective	0.93
Classroom Learning Strategies	17.1%	Study skills instruction, note-taking strategies; very effective	1.11
Computer-Assisted Instruction (CAI)	10.0%	Moderately effective	0.63
Peer Mediation	7.1%	Effective	0.86
Study Aids	5.7%	Study guides, text outlines; promising, but needs more study	0.94
Hands-On or Activity-Oriented Learning	5.7%	Appears effective, but needs more study	0.63
Explicit instruction	4.3%	Most effective of any strategy studied	1.68

Note. Adapted from “Do Special Education Interventions Improve Learning of Secondary Content? A Meta-Analysis,” by T. E. Scruggs, M. A. Mastropieri, S. Berkeley, and J. E. Graetz, 2010a, *Remedial and Special Education*, 31, p. 437-449.

Additionally, Scruggs et al. (2010a) identified other instructional strategies being used and summarized their effectiveness. Using accommodations and modifications for students in the form of study aids, graphic organizers, and classroom learning strategies was somewhat effective in helping students organize educational materials. Accessing the general education curriculum (inclusion), however, has not been proven to improve educational outcomes for students with special needs. Insufficient evidence was available to determine whether or not Authentic Learning (Hands-on Learning) could be defined as an EBP. Differentiated instruction also could not be definitively described as evidence-based. Direct instruction (Explicit instruction) proved to be highly effective for students but limited studies prevented this strategy from being confirmed as evidence-based. Multiple intelligences teaching was not considered effective based on available research but Peer Tutoring (Peer Mediation) was shown to be somewhat effective in promoting secondary content learning. Scaffolding, which could be considered as part of classroom learning strategies, was associated with positive results. Service learning was not shown to improve student outcomes. Classroom learning strategies for mild-moderate and severe disabilities showed moderate improvements for students while Universal Design for Learning has not been shown through empirical evidence to significantly improve student outcome. Mnemonic strategies have been shown to significantly improve memory skills for students with disabilities (Scruggs et al., 2010a). Figure 2 shows how frequently the most effective strategies were found in studies and their order of effectiveness.

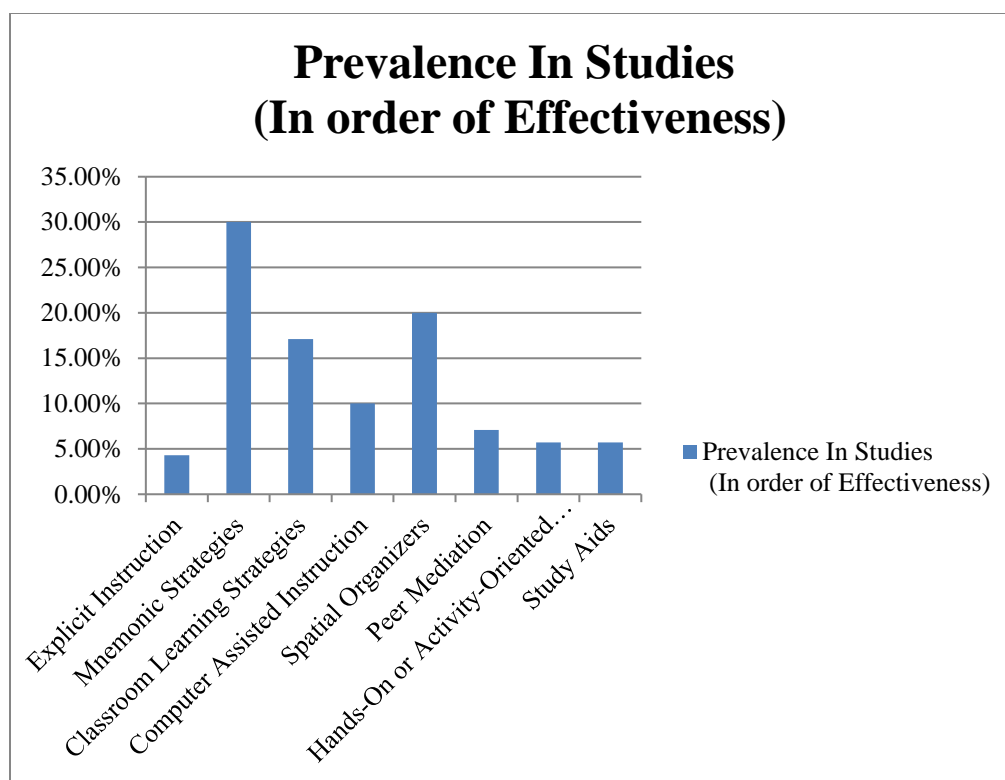


Figure 2. Prevalence of most effective strategies and their order of effectiveness in meta-analysis by Scruggs, Mastropieri, Berkeley, and Graetz (2010a). Adapted from “Do Special Education Interventions Improve Learning of Secondary Content? A Meta-Analysis,” by T. E. Scruggs, M. A. Mastropieri, S. Berkeley, and J. E. Graetz, 2010a, *Remedial and Special Education*, 31, p. 437-449.

Summary of interventions for students with HID. Ten meta-analyses were reviewed to identify instructional strategies in the areas of reading, mathematics, peer tutoring, and specific instructional components.

Reading. Flynn et al. (2012) found that specific instructional strategies should be targeted toward specific difficulties when working with adolescents with reading disabilities rather than combining or modifying various instructional strategies and that combined instructional strategies for students in Grades 5-8 produced positive effects for

students' outcomes on norm-referenced tests. They also found that phonics interventions did not prove effective for older students.

Wanzek et al. (2013) indicated that interventions for students with reading disabilities or difficulties yielded a small positive effect on a variety of reading outcomes, including reading fluency, word reading, word reading fluency, spelling, and confirmed the value of continuing the use of interventions for students beyond the third grade.

Berkeley et al. (2010) indicated that structured cognitive strategies were effective and comparable to other instructional strategies such as text-enhancement. Peer-mediation and self-regulation did not produce a significant effect on student outcomes. In general, strategies directing students to attend more carefully to the material being read and to think more systematically while reading, improved students' abilities to construct meaning from text. The authors concluded that while empirical evidence showing that a variety of instructional strategies designed to improve student reading comprehension are available for use with students with reading disabilities, few are actually implemented in inclusive classes. The authors suggested that EBPs were of little use if they are not implemented systematically in various classroom settings and that future research could help identify the reasons behind the researcher-implemented effect on instructional strategy implementation.

Sencibaugh (2007) addressed the use of interventions for reading comprehension for use with students with learning disabilities in Grades K-12 and concluded that two specific strategies yielded the most significant outcomes: questioning strategies involving self-instruction and paragraph restatements and text-structure-based strategies. The

author noted the benefits of teaching students with disabilities how to help themselves by using cognitive strategies to improve their reading comprehension and emphasized the responsibility of teachers to train students to use these metacognitive strategies. The author went on to state that preservice candidates should be taught how to effectively implement EBPs and instructional strategies in the classroom and that teachers should recognize the value of empirical evidence and research when implementing strategies designed to improve reading comprehension.

Therrien (2004) conducted a meta-analysis examining strategies designed to increase reading fluency and improve reading comprehension for students with disabilities. Findings indicated that repeated reading as an instructional strategy had the potential to improve students' overall reading fluency and comprehension when using new reading material. All repeated reading interventions achieved better results when administered by an adult versus a peer tutor. Students improved their reading fluency and comprehension when working with an adult, when provided cues, corrective feedback, and when passages were read repeatedly until a performance criterion was achieved.

Math. Kroesbergen and Van Luit (2003) focused on strategies for use with elementary students with learning disabilities in mathematics designed to help students acquire the math knowledge and skills needed to improve their math abilities. Three specific domains were considered: preparatory mathematics, basic skills, and problem-solving strategies. Instructional strategies that included self-instruction were most effective for teaching problem-solving skills. For learning basic skills, direct instruction with an adult proved to be most effective. Using technology as an aid for instruction

produced lower effect sizes than other interventions and suggested that the computer was less effective compared to a teacher providing direct instruction. Peer tutors were less effective compared to other interventions, indicating that for students with disabilities, group work is not effective.

Flynn et al. (2012) synthesized studies focused on strategies for word problems for students ages 5-18 with math disabilities (MD). Results indicated that explicit instruction was effective for students with MD and, combined with specific interventions, resulted in increased ESs. Peer-assistance failed to benefit students and instructional strategies benefitted students with MD-only when compared to students with MD and reading disabilities (RD). Reading skills moderated the magnitude of ESs and for single-subject studies, the ES for MD-only yielded a mean ES of 1.45 while students with MD and RD yielded 0.58 relative to the baseline condition. The authors found that the magnitude of instructional strategies for students with MD when solving word problems was dependent on students' reading abilities.

Peer tutoring. Bowman-Perrott et al. (2013) focused on peer tutoring studies that included students from Grades 1 through 12. All studies used a single-case research design with baseline conditions that did not include any form of peer tutoring. The authors described peer tutoring as an effective “EBP based on the most current, high-quality standards for single-case research” (p. 52) which should be included in teacher-training programs. These findings, however, contrast with larger studies conducted by Kroesbergen and Van Luit (2003), and Flynn et al. (2012) for math interventions, and Berkeley et al. (2010) and Therrien (2004) for reading interventions which found limited

benefits using peer tutoring for students with disabilities. Additional research, including experimental design studies focused on peer tutoring for students with disabilities, could prove valuable when determining the overall effectiveness and generalizability of peer tutoring.

Academic, social, or cognitive interventions. Swanson and Hoskyn (2001) focused on identifying instructional strategies for secondary students with learning disabilities. Two specific instructional components, organization and explicit practice, contributed the greatest proportion of positive outcomes for students with LD, providing the opportunity to scaffold new information and relate it to previously learned information, thereby increasing the likelihood of retention.

Scruggs et al. (2010a) identified effective strategies for secondary students based on prevalence in studies as well as effectiveness. Mnemonic strategies, Spatial Organizers, Classroom Learning Strategies, Computer-Assisted Instruction (CAI), Peer Mediation, Study Aids, Hands-On or Activity-Oriented Learning, and Explicit instruction were identified as the most effective instructional strategies for secondary students. Other interventions did not satisfy the authors' standards based on sufficient empirical evidence.

Special Educators' Decision-Making Processes When Selecting EBPs and Instructional Strategies

Computer-assisted searches for applicable literature were completed utilizing Academic Search Complete (EBSCO), APA PsychNET (including APA PsychINFO), ProQuest, and Education Resources Information Center (ERIC) databases using various

combinations of the following descriptors: students with disabilities, special education, EBPs, instructional strategies, instructional practices, decision-making process, teacher perceptions of instructional interventions, educators, interventions. Finally, ancestral searches of literature reviews and meta-analyses were completed.

Studies were included in this review if they were published in a peer-reviewed journal between the years 2000 through 2015, identified with high-incidence disabilities. The search initially produced 67 studies of which 4 met the criteria for inclusion in this review. The studies were published in four journals: *Remedial and Special Education*, *Learning Disability Quarterly*, *Exceptionality*, and *The Journal of Special Education*.

Boardman et al. (2005) conducted a study of how special education teachers perceive EBPs while Swanson, Solis, Ciullo, and McKenna (2012) studied teachers' perceptions about instructional strategies in Response to Intervention (RTI). Kavale (2001) conducted a study on the value of using meta-analyses to make decisions regarding interventions in special education. Finally, one study focused on special education and general education teachers' selection of instructional strategies in secondary mathematics (Gagnon & Maccini, 2007).

Special education teachers' perceptions of EBPs. Boardman et al. (2005) conducted a qualitative study investigating elementary-level special education teachers' perceptions of EBPs and professional development. The researchers participated in eight 2-hour focus group interviews with special education teachers from Florida and Texas based in 4 different schools. Included were 30 teachers of students with LD and 19 who taught students with EBD. Background information was collected about the teachers,

including highest level of education completed, grades taught, years of teaching, and instructional settings. Six to 12 teachers were included in focus groups designed to stimulate discussions about EBPs. Transcriptions were used to define specific categories for analysis and develop a coding system for descriptive information. Results were categorized into four themes for analysis: (a) program selection, (b) program use, (c) program sustainability, and (d) professional development and research.

The study revealed that in general, teachers primarily based their decisions for selecting instructional strategies on the individual needs of their students and the effectiveness of a practice for student outcome, as determined through personal experience. This was a significant consideration identified as more important than whether or not a practice was research based. Two thirds of the teachers of students with LD stated that while their districts provided instructional plans and guidelines, including recommended instructional strategies, they did not feel obligated to follow those guidelines. Teachers of students with EBD had less school and district influence on their teaching practices and noted that managing behaviors was paramount compared to compliance with district-preferred instructional strategies. The majority of teachers stated that as professionals, they were expected by school and district leaders to select instructional strategies that were most appropriate and effective for the students they served. Several teachers did state that research should be considered when selecting new instructional practices in order to stay up to date with current recommendations. Most teachers, however, reported “they were neither obligated nor impressed by the current push to use research based practices in their classrooms” (p. 177). In addition, teachers

indicated that professional development that could provide new instructional techniques was severely lacking.

Another common theme among teachers was a lack of trust in the claims promoted by research studies. Teachers did not believe that the students used in research studies resembled the students they had in their classrooms. The impression that strategies were based on marketing and the sale of programs to school districts further exacerbated the teachers' lack of trust in using certain instructional strategies. Teachers reported that "unless their basic needs, such as access to relevant programs and materials, were met, there was no incentive for them to search out and attempt to implement new practices" (Boardman et al., 2005, p. 177).

Findings also showed that teachers' negative attitudes toward research could be based on lack of experience with practices specific to special education and suggested that professional development was not meeting the needs of elementary teachers. Limited access to basic classroom requirements such as resources and materials was a common theme among teachers who claimed that special education was the last to receive new material in their school hierarchy. After attending professional development sessions, few special education teachers were actually given the materials or programs they just learned about, leading to frustration with administration at school and district levels. Others claimed that workshops and learning sessions were irrelevant to their students' needs and many actually declined to attend training sessions.

Several teachers of students with learning disabilities also discussed their isolation from general education teachers and others with whom they might collaborate. In

addition, many teachers assumed that inexperienced teachers would be more likely to incorporate new instructional strategies when teaching students with disabilities compared to veteran teachers. The more experienced teachers preferred to continue using instructional strategies learned to be effective through personal experience rather than pursue new ideas. Based on several issues, such as lack of time, variable quality of programs and professional development, as well as limited resources, several teachers reported that they preferred to not attempt any new instructional strategies or programs.

Boardman et al. (2005) identified several limitations to their study, including the fact that since the researchers met with all participants in focus groups and also compiled all data, researcher objectivity may have been compromised. The social nature of the focus groups may have influenced participants' comments and individual interviews could have yielded different comments. The small number of participants and qualitative nature of the study also limited its generalizability to other settings and grade levels. What was evident, however, was the lack of trust among teachers when they considered introducing instructional strategies for use with students with disabilities. The researchers noted that the very nature of statistical research prevented teachers from translating the information into practical classroom strategies. Teachers could not see the practical value of using unfamiliar techniques or techniques unsupported with materials and resources. Teachers preferred to use instructional strategies they were already comfortable with or those recommended by trusted colleagues. Boardman et al. (2005) recommended included encouraging school districts to provide professional development programs targeted to teachers working with students with LD and EBD and to provide the

necessary materials and resources in order to implement and sustain research-based practices.

Perceptions of response to intervention (RTI). The response to intervention (RTI) instructional framework was designed to provide early identification of academic difficulties and provide preventive intervention to students struggling with reading and math in order to reduce referrals to special education (Swanson et al., 2012). The RTI framework has been implemented nationwide and has significantly shifted the roles of general and special education teachers. RTI instruction focuses on preventing student failure and providing instructional interventions to students identified as performing below grade level. Swanson et al. (2012) studied three aspects of RTI implementation: (a) the perceptions of special education teachers and the RTI instructional framework, (b) the extent to which these educators taught critical components of reading and math to students in Grades 3 through 5, and (c) the extent to which these teachers used EBPs to teach reading and math. The authors focused their qualitative study on interventions in reading and math instruction and all participants were special education teachers who taught reading or math to students in Grades 3-5. Purposive sampling was used to identify an appropriate school district for inclusion in the study. Purposive sampling refers to the process by which a researcher selects a sample based on the experience or knowledge of the group that is to be sampled; in this case a school district that met specific pre-established criteria: (a) a majority of schools met minimum standards on state assessments in reading and math, (b) the population was ethnically diverse and included a proportion of students identified as LD aligned with national trends, (c) an

RTI framework had been utilized for at least three years, and (d) the school district employed a designated RTI coordinator.

The study was conducted by Swanson et al. (2012) over two years with 17 special educators participating during the first year. Due to reassignments, 12 special educators participated in the study during the second year. Classroom observations were conducted for reading instruction and the *Instructional Content Emphasis – Revised* (ICE-R; Edmonds & Briggs, 2003) was used as the measurement tool. For math observations, the authors used the Math Observation Tool (MOT; Bryant, 2009). Both measures were multidimensional and used for recording and coding teachers' classroom instruction and include a description of the instruction being taught, the amount of time allocated to instructional components, student grouping patterns, types of material used by teachers and students, levels of student engagement, and quality of instruction.

During the first year of the study, teachers were observed twice in a three-month time span, for an entire school day. During the second year, teachers were observed for three full school days, once each in the fall, winter, and spring. Teachers were given advance notice of the observations and advised to maintain their typical classroom routines.

Prior to observations, observers received training in order to ensure consistency in observations. During the first year, Swanson et al. (2012) conducted a two-hour focus group with the participants in order to understand their perceptions of RTI. Sessions were audio recorded and transcribed. During the second year, individual interviews were conducted designed to determine specific impressions of RTI implementation. The

authors identified the number of times specific terms related to six themes were referenced by teachers during focus groups and interviews and also identified specific instructional components observed during reading observations.

The focus of the study by Swanson et al. (2012) was to determine teachers' perceptions of the interventions associated with RTI. Teachers most frequently cited access to early intervention for students, meeting unique student needs, and staff collaboration as the most significant benefits of RTI. The authors noted that while this study identified important aspects of teachers' perceptions of RTI and the extent to which EBPs were reflected in classroom practices, its generalization was limited based on the selection of the school district, the length of the study, and few previously conducted observation studies. They concluded by recommending that additional observation studies should be conducted in middle and high schools in order to inform procedures and policies for school districts.

Decision making in special education. Kavale (2001) conducted a study on the value of using meta-analyses to make decisions regarding how best to use seven preidentified instructional strategies in special education. Recognizing the critical role of decision making in specialized education, the author sought to determine how special educators selected instructional strategies. Given that instructional interventions rarely produce the same results for all students with disabilities, using meta-analyses provided the opportunity to review and consolidate the findings of numerous studies. The first intervention considered was psycholinguistic training based on the assumption that "language is comprised of discrete components, and these components can be improved

with training” (p. 247) and language is significant to learning. Noting that evidence-based research indicated both positive and negative effects for interventions designed to improve acquisition and use of language, studies designed to improve reading, vocabulary, writing, etc. were considered. The conclusion of this component of the study indicated that when appropriate, training designed to remedy deficits in psycholinguistics were effective and should be incorporated into remedial programs. Perceptual-motor training was also considered and based on the evidence reviewed, the author concluded that this training should not be included as an intervention or program of training as even the highest effect size of training programs was no greater than $M = 0.16$ while the lowest effect size was $M = 0.06$.

Considering modality-matched instruction, results of meta-analyses indicated that only 56% of participants benefited from having their learning tailored to their specific needs, indicating a gain only slightly above chance (50%). In general, content and substance appeared to have a greater impact on academic improvement when compared to a particular style of instruction. Kavale (2001) also noted that treatments for attention deficit disorder (ADHD) have consisted of stimulant medication, diet modification, and social skills training. Results of consolidated research indicated that while remaining somewhat controversial, stimulant medication continued to be an effective intervention for treating ADHD while diet modification was shown to be ineffective for most students. Social skills training showed mixed results and while popular for students with LD or EBD, it did not appear to promote or enhance social functioning for these students.

Kavale (2001) concluded by indicating that decision making is a complicated process and when selecting instructional strategies for students receiving special education, many factors should be considered. Meta-analyses of research may provide a powerful tool by increasing the knowledge base needed to inform decisions for students and school programs.

Secondary mathematics. Gagnon and Maccini (2007) conducted a survey examining general and special educators' perceptions of "(a) definition of math; (b) familiarity with course topics; (c) effectiveness of methods courses; (d) preparation to use and frequency of use of instructional strategies; and (e) factors contributing to the use of instructional strategies" (p. 43). Based on standards from The National Council of Teachers of Mathematics (NCTM), teachers were expected to actively engage students during math instruction and "empower students to think mathematically" (p. 44). For students with LD as well as EBD, higher level problem solving, independent work, attention to multiple-step problems, and "thinking mathematically" may prove very difficult. In order to fulfill the requirements of No Child Left Behind (NCLB, 2001), teachers are expected to utilize EBPs to teach students with and without disabilities. The authors conducted a survey study designed to determine the importance of identifying what influences teacher decisions about how and what to teach students. Two variables were noted as influencing and predicting the number of EBPs teachers used in their instruction: teachers' perceived knowledge of math topics for special education teachers and the number of methods courses taken by general education teachers (Maccini & Gagnon, 2006). Similarly, Maccini and Gagnon (2002) determined that three factors

affected teachers' decisions regarding their teaching practices: teacher knowledge of the content, teacher preparation, and teacher beliefs.

In order to gain greater insight into teacher familiarity and use of instructional practices in secondary mathematics classes, the authors conducted a survey of general and special education math teachers in public schools across the United States. The sample was determined by a professional research company, Quality Education Data (QED) using a personnel database from 2000-2001. After excluding ineligible participants, the total survey sample size consisted of 253 special educators and 224 general educators. All participants were surveyed using closed-ended and ordinal questions. One survey was developed for general educators and one for special educators, with only slight difference, seeking information related to years of teaching in special education versus years of teaching math. Questions were written based on previous research conducted by Maccini and Gagnon (2006) and Maccini and Gagnon (2002) as well as feedback from graduate students and professors in math education and survey research consultants.

Reliability was based on standardized directions, data entry confidence, and reliability checks on open-ended responses. Validity was determined through teacher focus groups and consultants who addressed any issues related to clarity of questions and overall survey format. Surveys were mailed to selected educators with a cover letter, survey explanation, and reply envelope. One week later, a reminder/thank you note was sent, followed six weeks later by a second mailing of the survey to nonrespondents. A total of 35.97% ($n = 91$) special educators responded while 33.92% ($n = 76$) general

educators responded, considered by Gagnon and Maccini (2007) to be a low response rate.

Using descriptive statistics and comparison of group means, results indicated that special educators reported teaching math primarily in self-contained, segregated settings and being less familiar with math topics compared to general educators. General educators were more prepared to teach students using graphing calculators and two-dimensional graphics while special educators were more prepared to use specific instructional strategies such as cooperative learning, small-group instruction, and peer tutoring.

Teacher content knowledge and preparation. Maccini and Gagnon (2006) noted that general educators reported greater levels of content knowledge and ability to teach all math courses compared to special education teachers. Special educators more frequently taught pre-algebra and general math skills classes compared to the higher level math classes such as Algebra II and Trigonometry taught by general educators. More general educators held math degrees (43.6%) compared to special educators (1.2%). More than 50% of special educators held special education certification while no general educators were special education certified. There was no significant difference noted in years of teaching experience. A greater number of general educators ($n = 65$) had taken math education methods courses compared to special educators ($n = 56$) but special educators felt more prepared overall to teach students with LD and EBD.

Compared to general educators, special educators were better prepared to utilize instructional strategies, including providing feedback and reinforcement to students,

graphing student progress, teaching students to self-monitor, incorporating mastery/criterion learning, and overall increased direct instruction. The authors noted that teachers' impressions and understandings of "what math is" directly influenced their teaching styles and use of instructional strategies. Low correlations, however, were seen in survey results for teacher beliefs and orientations and the use of instructional strategies such as direct instruction, graduated instruction, and student groupings.

The amount of empirically validated research focused on teachers' perceptions and use of EBPs is limited. Maccini and Gagnon (2006) noted several limitations that greatly reduced the generalizability of their survey study. First, the sample size and survey return rates were small and, second, no comparisons between respondents were possible due to confidentiality restrictions. Maccini and Gagnon (2006) suggested that future studies should include case study research in order to better identify what determines teachers' usage of EBPs and stated that the use of observational data within a case study design would help to validate teachers' perceptions of instructional strategies.

Summary of Literature Review

The research literature provided specific evidence regarding the effectiveness of instructional strategies for use with students with disabilities when implemented and tested by researchers. There is limited information in the literature indicating the effectiveness of EBPs and instructional strategies when special education teachers are left on their own to identify, select, and implement strategies to improve the academic outcome of their students. Several researchers (Boardman et al., 2005; Maccini &

Gagnon, 2006; Swanson et al., 2012) have suggested that case study and observation research be used as ways to increase the knowledge base for this field.

Implications for additional research. There is a need to continue to investigate the decision-making processes and the influences impacting teachers as they determine the instructional strategies used to teach students with disabilities. It must be determined if teachers can define and understand what EBPs are, or distinguish between EBPs and instructional strategies. It is unclear if teachers comprehend the significance of using EBPs with fidelity or if teachers' years of teaching experience or other factors influence how they decide to teach students with disabilities. Boardman et al. (2005), Maccini and Gagnon (2006), and Swanson et al. (2012) recommended that case study and observation research be used to increase the knowledge base to more fully understand how and why teachers choose instructional strategies. Surveying special education teachers was also suggested as a way to determine if teachers face any obstacles or barriers to implementing instructional strategies when teaching students with disabilities (Gagnon & Maccini, 2007).

The current study is an extension of the previous research conducted by Boardman et al. (2005), Maccini and Gagnon (2006), and Swanson et al. (2012), and included a multi-case research design that incorporated interviews, observations, and a survey to help identify what teachers at the beginning, mid-career, and senior levels of teaching know about EBPs and what influenced their use of instructional strategies when teaching secondary level students with HID in the self-contained setting. Additionally, teachers were asked to identify the external and internal elements they encounter when

deciding which EBPs and instructional strategies to implement. The results may help address issues of compliance, particularly at the local level and as required by NCLB and IDEA-2004. Eliciting the perspective of special education teachers is paramount to understanding the needs and the means to effect change. The challenge for special educators is remaining current with the changing demands of the practice based upon research, regulations, and compliance. Additional research may help identify how to increase and improve the effectiveness of special education teachers' use of EBPs and instructional strategies.

Chapter 3: Method

This chapter provides a detailed description of the study design-and procedures. This chapter describes the study setting, recruitment and eligibility of participants, types of materials used, procedural integrity, reliability, validity, and data analysis. The purpose of this study was to identify what EBPs and instructional strategies beginning, mid-career, and senior special education teachers stated they used when teaching students with HID at the secondary level and, while being observed, if the teachers used these instructional strategies in their classes. This study also sought to identify what external and internal influences may have affected teachers' selection of EBPs and instructional strategies. This work is an extension of the research conducted by Zipoli and Kennedy (2005), Gagnon and Mancini (2007), and Gaughan (2008) in which speech and language pathologists, secondary math teachers, and elementary teachers respectively were surveyed and interviewed about what influenced their selection and implementation of instructional strategies, followed by participant observations. This study was designed to answer the following research questions (RQ):

1. Research Question 1. What EBPs and instructional strategies do special education teachers at the beginning, mid-career, and senior levels state they use when teaching students with HID in the self-contained setting?

2. Research Question 2. What EBPs and instructional strategies do special education teachers at the beginning, mid-career, and senior levels use when teaching students with HID in the self-contained setting?
3. Research Question 3. What external and internal factors do special education secondary teachers at the beginning, mid-career, and senior levels state influence them when deciding which EBPs and instructional strategies they implement when teaching students with HID in the self-contained setting?

Definitions of EBPs and instructional strategies were provided to participants in order to help them understand the meaning of the terms, as used during this study. The following definitions were used:

- *Instructional strategy*: Instructional strategies are methods used in teaching to help students learn. Instructional strategies are the approaches a teacher takes to engage students in learning, to probe critical thinking skills, to keep them on task, to engender sustained and useful classroom interaction, and to enable and enhance their learning of course content (Mitchell, 2007)
- *Evidence-based practice* (EBP): An evidence-based practice is an instructional strategy, intervention, or teaching program based on empirically supported evidence that has resulted in consistent positive results when experimentally tested (Mesibov & Shea, 2011).

Research Design

In this study, a multiple-case descriptive study utilizing cross-case analysis was employed (Yin, 2014). Case study research is an exploration of a bounded system and is

frequently used in educational studies (Yin, 2014). The term *bounded* refers to the characteristics of the subject or individuals being studied (Creswell, 2008), such as secondary level special education teachers teaching students with HID. Based on relevant literature and the evidence obtained from each phase of this research, theories about the results were developed. Three participants were considered as individual cases and were bounded by the following characteristics: secondary level teachers, teachers of students with disabilities in self-contained classes, public school employees, and residents of the mid-Atlantic area. Differences were types of teaching experience and years of teaching experience.

Participants, as cases, were interviewed and observed individually while cross-case analysis consisted of reviewing similarities and differences between participants based on categories derived from transcripts from five sources: lesson plan, preobservation interview, classroom observation, postobservation interview, final interview, and Experience and Attitude Questionnaire (EAQ). According to Yin (2014), the use of cross-case analysis is likely to result in robust findings which may contribute to the knowledge base of group, individual, or social actions when seeking to understand social phenomenon. In this study, the researchers sought to explain the social phenomenon of what influenced secondary level teachers when selecting and implementing EBPs and instructional strategies when teaching students with disabilities in the self-contained setting.

Theoretical Propositions

Theoretical themes or propositions (Yin, 2014) based on related literature and previous research results can be helpful to guide the end analysis of descriptive case studies. Along with the Research Questions, these propositions helped guide and focus the researcher to develop conclusions about the results of this study. This study examined the use of EBPs and instructional strategies by beginning, mid-career, and senior teachers. Theoretical propositions that developed from the literature and previous research studies were: Are experienced or inexperienced teachers more likely to rely on personal experience and peer sharing when selecting EBPs and instructional strategies (Gaughan 2008; Maccini & Gagnon, 2006)? Are experienced or inexperienced teachers more likely to use educational research to guide their instruction (Burns & Ysseldyke, 2009; Gagnon & Maccini, 2007; Morgan et al., 2010)? Are experienced or inexperienced teachers more likely to be affected by external factors such as supervisors, administrators, educational research, and parents when selecting EBPs and instructional strategies (Boardman et al., 2005; Sencibaugh, 2007)? Are teachers with the least experience influenced by administrative directives and parental requests when selecting EBPs and instructional strategies (Boardman et al., 2005)? These theoretical propositions will be addressed in Chapter 4 – Results, and further addressed in Chapter 5 –Discussion as they helped define this study.

Participants

Recruitment and selection. One component of this study focused on identifying differences in the use of instructional strategies and EBPs when comparing teachers with

varying ranges of teaching experience. Three ranges of teaching experience were established based on levels of experience described by the U.S. Department of Education (2013). The categories of experience used were as follows:

- *beginning* teacher with 1-5 years teaching experience
- *mid-career* (professional) teacher with more than six years teaching experience
- *senior* (master) teacher with extensive teaching experience (more than 15 years).

Selection process. Potential participants for this study were sought from two school districts in the mid-Atlantic region of the United States. Institutional review board (IRB) permission was acquired by the researcher to proceed with the current study (see Appendix A). The personnel directors from two school districts were contacted by telephone and asked if they would consider allowing this research to be conducted with teachers working in their districts. After getting verbal consideration, a written request for permission to conduct research was mailed to the personnel directors of the two school districts. Permission was received electronically and by mail from both school districts. Potential teacher participants were identified from specific high schools, and those individuals meeting the criteria for inclusion in this study were contacted through email. Each potential participant was informed about the time obligation requirements and the five phases of this study (see Appendix B). Two of the teachers agreeing to participate had previously taken part in a survey study conducted by the researcher. The third participant was referred to the researcher by one of these teachers. The researcher

requested and received permission from the building administrators to enter their schools, interview, and then observe the teacher participants in their classrooms for two teaching sessions. The selection criteria for participants follow.

Selection criteria. The inclusionary criteria were:

- special education licensure at the secondary level (Grades 6-12)
- teacher willingness to participate
- administrator recommendation/approval for participant selection, use of school spaces for interviews, and permission to observe classroom instruction when students would be present
- currently teaching students with HID in the self-contained setting at the secondary level
- currently teaching in a public school in the mid-Atlantic area
- effective teaching based on student standardized test results able to provide copies of student standardized results
- able to provide copies of most recent teaching evaluations
- able to commit to all five phases of the current study
- met one of the experience categories: beginning, mid-career, or senior teacher.

The exclusionary criteria were:

- teaching general education classes only
- not teaching a self-contained class with students with HID
- inability to commit to all five phases of the current study
- unable to meet all inclusionary criteria.

The teachers selected to be part of the study met all inclusionary criteria. Participants were given two copies of the Informed Consent Form (see Appendix B) and if they agreed to voluntarily participate in the study, they were asked to sign both copies, return one to the researcher, and keep one for their records. The signed Informed Consent Forms were maintained in a secure file with the researcher. Participants were provided with the definitions of *instructional strategy* and *evidence-based practice* for the focus of this study. The teachers agreed to answer background questions, participate in multiple interviews, complete a questionnaire, and allow the researcher to observe their instructional practices in the classroom. Two participants were male and one was female. They were given the following alias identifications in order to preserve anonymity and avoid possible discovery from identifying information: Participant A (beginning teacher), Participant B (mid-career teacher), and Participant C (senior teacher). Participants A and C taught in the same location, District A, School A, while Participant B taught in District B, School B. Participants were given a checklist delineating data collection phases of the study, as shown in Table A1.

Demographics. Demographic information was compiled to identify participants' years and types of teaching experiences. In this way, comparisons could be made in the ways beginning, mid-career, and senior teachers selected and implemented instructional strategies.

Participant A. The beginning teacher, Participant A, was a 34-year-old White female in her first year as a teacher. She previously completed her bachelor's degree in occupational therapy and worked with adults in nursing homes for 10 years. She then

changed careers and earned a master's degree in Special Education from an online university. Her experience included extensive classroom observations, practicum sessions, and student teaching English and World History to middle school students with HID in the self-contained and inclusive classes in a rural setting. She last participated in a university-level course less than a year prior to the current study. She took part in professional development about differentiated instruction while student teaching. During the current study, Participant A taught two class sections of World History and two class sections of English 9 to students with HID in self-contained classes. She was not highly qualified in either subject area but was fully certified in Special Education. She successfully passed state-mandated proficiency exams required for her teaching license.

Participant B. The mid-career teacher, Participant B, was a 47-year-old White male who completed his bachelor's and master's degrees in the Northeast region of the United States. His teaching experience included teaching for 15 years in suburban and rural areas. Over the course of his career, he taught for eight years in different suburban areas and seven years in a rural area. He taught students with LD and ED in Grades 6-12 in U.S. History, World History, Biology, Resource, and Government. Participant B's most recent university class was nine years ago when he completed a course about Autism. Approximately two years prior to the current study, he participated in professional development on Creating Independence through Student-Owned Strategies. During the current study, Participant B taught one class section of World History II and one class section of U.S. History to students with HID in the self-contained settings. He also taught one class section each of U.S. Government and U.S. History in the general

education co-taught settings. He was highly qualified in History and Biology based on his undergraduate degree in history and successfully passing the state proficiency exam for Biology. He completed his master's degree in Special Education approximately nine years prior to the current study and was fully certified in Special Education.

Participant C. The senior teacher, Participant C, was a 58-year-old White male who completed his bachelor's and master's degrees at universities in the Northeast region of the United States. His master's degree was in Special Education. He completed his doctor of education (Ed.D.) in educational leadership approximately one year prior to the current study through an online program with a university located in the Northeast region of the United States. His experience included teaching students with special needs for 25 years in several areas of the country. He taught in urban areas for five years, suburban areas for a total of 11 years, rural areas for four years, and the inner-city for five years. Throughout his career, Participant C taught students with LD and ED in Grades 6-12 in Life Skills, Resource, English, Pre-algebra, and Algebra 1 in both general education cotaught settings and self-contained special education settings. Approximately one year prior to the current study, he completed a university course entitled, "Pitfalls of Leadership in Secondary Education." Approximately six months prior to the current study, he completed professional development entitled "Response to Intervention." During the current study, Participant C taught Algebra I for two class sections to students with HID in the self-contained setting, Algebra I in the general education co-taught setting for one class section, and U.S. Government to students in the general education co-taught setting for one class section. He was highly qualified in Algebra and

Government based on successfully passing state-mandated proficiency exams. He was also fully certified in Special Education.

Interrater reviewers. One reviewer was the researcher and the secondary interrater reviewer was a female Ph.D. colleague with 15 years' experience in special education, and extensive experience with research data collection and analysis.

Summary. Three participants took part in the current study and ranged in age from 34-58 years. Each participant completed a master's degree in Special Education. Participant C completed his Ed.D. through an online university. Participant A taught in a rural area only while Participants B and C taught in multiple locations and areas. Participants A and C were enrolled in university-level courses within one year of the current study while Participant B attended a university course approximately nine years prior to this study. All participants attended professional development within the past year related to working with students with HID. The secondary interrater reviewer was an experienced special educator and researcher and contributed to the validity of this study.

Settings

This study was conducted in two public high schools in the mid-Atlantic region of the United States. Descriptors are provided for each district and school.

District A. This rural district was comprised of 19 schools, with a projected cost per student of \$11, 095. The total student population for this district was approximately 11,294 with 862 school-based staff positions. The student demographics were comprised of 6.13% African American, .03% American Indian, .20% Asian American, 5.3% Hispanic, and 87.12% Caucasian students. Approximately 23.4% of students received

free/reduced meals, 4.5% received ESOL services for limited English proficiency, and 11% received services for disabilities.

School A. This high school served approximately 1,141 students in Grades 9-12 with 60 faculty members. The school population was made up of Asian or Pacific Islander (.9%), African American (7.1%), Hispanic (6.12%), and Caucasian (85.6%) students. Of the total population, 3.30% received ESOL services for limited English proficiency, 10.3% received services for disabilities, and 11% received free/reduced meals. Female students made up 50.5% of the population while 49.2% of the students were male. The school schedule was a four-period 90-minute block schedule with alternating color-coded days.

District B. This rural district was comprised of 16 schools, with a projected cost per student of \$9, 970. The total student population was approximately 13,048 with 685 school-based staff positions. The student demographics were comprised of 5.99% African American, .27% American Indian, 1.73% Asian American, 8.87% Hispanic, and 81.45% Caucasian students. Approximately 27.8% of students received free/reduced meals, 3.5% received ESOL services for limited English proficiency, and 10.8% received services for disabilities.

School B. This high school served approximately 1,474 students in Grades 9-12 with 117 faculty members. The school population was made up of Asian or Pacific Islander (2%), African American (6%), Hispanic (9%), and Caucasian (79%) students. Of the total population, 3.40% received ESOL services for limited English proficiency, 10.3% received services for disabilities, and 24.0% received free/reduced meals. Female

students made up 50% of the population while 50% of the students were male. The school schedule was a four-period 90-minute block schedule with alternating color-coded days.

A sample participant schedule calendar (see Table A2), identified details regarding the dates for completing each study phase and was provided to each participant. This helped to guide the researcher in order to complete all phases of the study in a timely manner.

Classroom observation settings. Both classroom observations with Participant A took place in the same medium-sized rectangular-shaped classroom containing two teacher desks, 12 student desks, a whiteboard with ceiling-mounted projector, one work table, three bookcases, and two storage cabinets. Both observations were 90-minute English 9 lessons, made up of eight students; two were female and six were male.

The first observation with Participant B took place in a large rectangular-shaped classroom containing 2 teacher desks, 26 student desks, a whiteboard with ceiling-mounted projector, 1 work table, 2 bookcases, and 3 storage cabinets. The class was a 90-minute World History class and students were in the 10th grade. The class was comprised of five students; three students were male and two students were female.

The second observation with Participant B took place in a very small classroom containing 1 teacher desk, 15 student desks, and a whiteboard with ceiling mounted projector. Several computers were on a work table, alongside 1 bookcase and 2 sets of storage shelves. The room was a multipurpose class used for math and English instruction in addition to the social studies class. The class was a 90-minute World History class and

students were in the 10th grade. The class was comprised of seven students; five students were male and two students were female.

The first observation with Participant C took place in a medium-sized rectangular-shaped classroom containing 2 teacher desks, 15 student desks, a whiteboard with ceiling-mounted projector, 1 work table, 2 bookcases, and 3 storage cabinets. The class was Algebra I, Part 1 in the self-contained setting for students with HID and was a 90-minute session. Students were in the 9th and 10th grades. The class was comprised of five students; three students were male and two students were female.

The second observation with Participant C took place in a large rectangular-shaped classroom containing 2 teacher desks, 22 student desks, 2 large whiteboards, and 1 work table, along with multiple cabinets and shelves. The class was Algebra I, Part 1 in the self-contained setting for students with HID and was a 90-minute session. Students were in the 9th and 10th grades. The class was comprised of eleven students; five students were male and six students were female.

Study Phases

There were five phases for this study. Phase I, the preliminary phase, consisted of each participant answering seven electronically provided background questions.

Participants were notified that a copy of their lesson plan for the lesson to be observed would be requested during the next phase of this study. Phase II, the preobservation phase, consisted of a preobservation interview, conducted immediately before each observation. Participants were asked to provide the researcher with a copy of their lesson plan, and to respond to seven questions focused on the objectives of the lesson about to

be observed. Participants were also asked to provide a description of the characteristics of the students in the class. Phase III, the observation phase, consisted of observing the participant during two 90-minute instructional sessions. Phase IV, the postobservation phase, consisted of the participants responding to five postobservation questions about the lesson just observed. Postobservation interviews were conducted following each observation. At the conclusion of the second postobservation interview, participants were asked to complete the Experience and Attitude Questionnaire (EAQ) about EBPs. Phase V, the final section, consisted of participants answering 10 questions related to their knowledge of and attitudes toward instructional strategies and EBPs. All interviews and observations were conducted by the researcher. The phases and data sources used in each phase are outlined in Figure 3 and explained in detail in the data sources and research procedures sections.

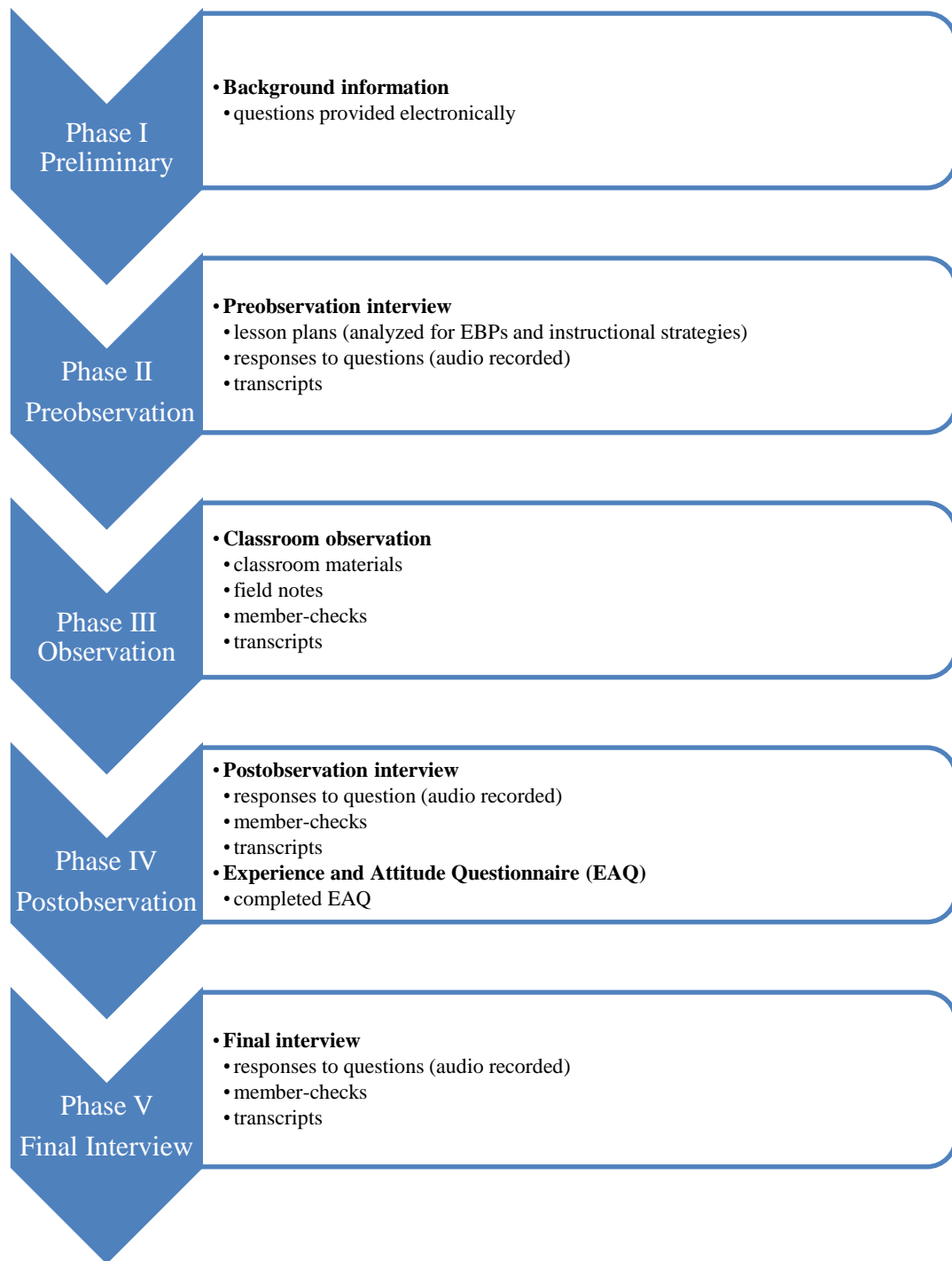


Figure 3. Study phases outline.

Data Sources

Phase I. The data source for Phase I consisted of a background information form with six questions designed to acquire information about the colleges or universities participants attended, professional development sessions attended, subject areas taught, and grades and disability labels of the students taught during their teaching careers. The following questions were asked:

1. What is the highest degree you have received and in what field?
2. How many years total have you been teaching?
3. What grade levels and subjects have you taught during your career?
4. Describe the locations at which you have taught (e.g., urban, suburban, rural, and inner-city) and how many years you taught at each location.
5. When was the last time you were enrolled in a college or university-level education class, and what was the course (courses)?
6. When was the last time you participated in a professional development activity designed to improve teaching skills or provide instruction related to teaching techniques, and what was the focus of this professional development activity?

Phase II. The data sources for Phase II consisted of the preobservation interviews, lesson plans, and any student class material planned to be used during classroom observations. The interview questions were designed to determine if the participants could identify the EBPs or instructional strategies they planned to incorporate into their instruction. The lesson plans were requested to determine if the

participants used this tool to preidentify the EBPs or instructional strategies they planned to incorporate into their instruction. Student disability information was also requested.

During the preobservation interviews, the following questions were asked:

1. What is your objective for today's lesson?
2. What is that objective based on?
3. How did you decide on this objective?
4. How will you assess if the students have met the objectives for the lesson?
5. Tell me about the students in your class. (e.g., strengths, weaknesses, disability)
6. Tell me how you will be teaching this lesson to your students:
 - a. What will you be doing that is specific to this group?
 - b. What unique, specific, or general materials will you be using?
 - c. What unique, specific, or general instructional strategies will you be using?
7. Is there anything else you would like me to be aware of before I enter your classroom?

Phase III. The data sources for Phase III consisted of two 90-minute classroom observations per participant during which time the researcher took longhand notes about the instruction, activities, and dialogues in the class. Notes were made about any EBPs or instructional strategies observed. Using longhand field notes, the following information was collected during the classroom observations (see Appendix C):

- Descriptions of physical aspects of the classroom, instructional activities, the lesson, and the lesson objective
- Student groupings (e.g., peer pairing, small-group activities, large-group activities)
- Teacher/student dialogues and interactions
- Instructional strategies (observed, stated, or referenced), the type and use of any materials, and the use of any technology with an instructional strategy.

Phase IV. The data sources for Phase IV consisted of the postobservation interviews and the Experience and Attitude Questionnaire (EAQ). During the interviews, five questions were asked about the use of EBPs and instructional strategies and frequency of their use during the observed classroom instruction. The questions asked during Phase IV were as follows:

1. During the preobservation interview, you stated that you planned to use specific instructional strategies in your class. (*Teachers were reminded at this point of what they previously stated they would use based on transcribed notes*). From those you preidentified, which instructional strategies do you recall using during the lesson I observed you teaching? Did you add any you had not planned to use? If so, why? Did you decide to not use any strategies you had planned to use? If so, why?
2. From those strategies just named, estimate the degree to which you relied on those strategies during instruction.

3. What influenced or impacted your decision regarding which strategies you used today?
4. How would you characterize the effectiveness of your classroom instruction related to the lesson objective?
5. Is there anything else you would like me to know regarding the instructional strategies or the effectiveness of your classroom instruction today?

The Experience and Attitude Questionnaire (EAQ) was a self-administered, multisectional questionnaire provided to participants in either a paper or electronic format following the second classroom observation. The EAQ was designed to identify participants' awareness and use of EBPs and what may influence their selection of EBPs and instructional strategies (see Appendix D).

Phase V. Phase V consisted of one final interview conducted in person with each participant following the second classroom observation. The following questions were asked during the final interview:

1. What does the term evidence-based practice mean to you?
2. Tell me about the instructional strategies you use most frequently in your classroom.
3. Are the instructional strategies you use most frequently considered to be evidence-based practices? How do you know?
4. How do you determine which instructional strategies you use?
5. Assuming these strategies are effective, how do you determine their effectiveness?

6. (a). What do you believe most influences your decision to select specific instructional strategies?
- (b). Are there other influences on your selection of instructional strategies?
7. Do you use educational research to influence your instruction? If so, in what ways? If not, why?

Data sources and research questions. To answer research question 1, what EBPs and instructional strategies do special education teachers at the beginning, mid-career, and senior levels state they use when teaching students with HID in the self-contained setting, the following data sources were used: lesson plan, responses to Phase II preobservation interview questions 6a, 6b, and 6c, responses to Phase IV postobservation interview question 1, and responses to Phase V final interview question 2. Instructional strategies and EBPs were organized by categories (e.g., explicit/direct instruction, mnemonics, peer-assisted learning, and rewards).

To answer research question 2, what EBPs and instructional strategies do special education teachers at the beginning, mid-career, and senior levels use when teaching students with HID in the self-contained setting, the following data sources were used: Phase III observation field notes, responses to Phase IV postobservation questions 1 and 2, and responses to Phase V final interview questions 2 and 3. Responses were transcribed and EBPs and instructional strategies identified by categories based on the specific strategy observed.

To answer research question 3, what external and internal factors do special education secondary teachers at the beginning, mid-career, and senior levels state

influence them when deciding which EBPs and instructional strategies they implement when teaching students with HID in the self-contained setting, the following data sources were used: responses to Phase IV postobservation interview questions 3 and 4 and responses to Phase V final interview questions 6a, 6b, and 8. The descriptive information from the EAQ was compared using the interval rating Likert scale (Creswell, 2008) and any open-ended comments were analyzed for patterns based on responses to interview questions, observations, and EAQ results. Results were compared to the table of internal and external influences as identified by Boardman et al. (2005).

Research Procedures

The research procedures consisted of collecting data during five phases of this study. The phases followed a sequential order designed to gather information from three participants about their educational experiences and their selection of instructional strategies.

The researcher contacted the appropriate Central Office personnel from two school districts seeking permission to conduct research in their schools. As requested, the researcher emailed a written description of the study purpose and procedures to the school districts. Permission to proceed with the study to interview and observe public school special education teachers was provided to the researcher by the school districts in email and written letter response (see Appendix E).

Each teacher who agreed to participate in the current study was mailed two copies of the informed consent form, asked to sign one of the forms if they agreed to participate in the study, keep one copy for their records, and mail the signed form to the researcher

in a preaddressed return envelope. The teachers also received an email describing the study phases, their time commitment, interview requirements, and classroom observation requirements (see Appendix F). The teachers also received a description of the study phases, their time commitment, interview requirements, and classroom observation requirements. Participants were informed that they would need to agree to two classroom observations and that Phases II, III, and IV would be repeated for each observation. The details of the procedures for each study phase follow.

Phase I. The purpose of Phase I, the preliminary phase, was to acquire demographic and background information about educational levels and previous teaching experiences. The six background questions were sent to participants electronically and returned electronically to the researcher when completed, based on the procedures used in the research conducted by Gaughan (2008). The expected time required by participants to respond to the background questions was approximately 25 – 30 minutes.

Participants were given a brief written description of the five phases of the study and asked to set dates and times for two 90-minute classroom observation. They were also asked to be prepared to have available for the researcher a copy of their lesson plans and copies of handouts or material they planned to use for instruction during each classroom observation.

Phase II. The purpose of Phase II, the preobservation phase, was to have participants identify the EBPs and instructional practices they planned to use during the classroom observation and to identify their objective for the lesson about to be observed. The researcher met with each participant in an empty classroom or other suitable location

selected by the participant, in order to interview and record responses to seven questions. The preobservation interviews were conducted immediately prior to the classroom observations, lasted approximately 15 – 20 minutes each, and were audio-recorded. The researcher took longhand notes in addition to the audio recordings. The researcher asked participants to provide a copy of their lesson plan (see Appendix G) and any student materials they planned to use during instruction. Lesson plans were requested to identify if the teachers delineated EBPs or instructional strategies on their plan for the course of instruction for each class. Audio-recordings of these interviews allowed for the accurate transcription of participant statements at a later time.

Phase III. Phase III, the observation phase, consisted of two 90 minute classroom observations per participant and took place at the convenience of the participant and the school administration. The classroom observations were conducted by the researcher with each participant immediately following the preobservation interviews. The researcher was escorted to the classroom and seated in a discrete location, as predetermined by each teacher. No audio or video recordings were made of any observations when students were present. At each teacher's discretion, the observer was introduced to the students and the students were informed that the researcher was there to observe the teacher. A classroom observation cover sheet (see Appendix H, Table H4) was used to record the teacher's name, school, location, observation date, time of day, subject taught, teacher, class size, and student descriptions. In addition, a checklist was utilized by the researcher to identify completion of interviews and observations with each participant (see Appendix H).

Field notes included the use of abbreviations, arrows, and diagrams developed by the observer to facilitate speedy notetaking. The purpose of the field notes was to have a record of instructional and other activities during the lesson, and the field notes were transcribed by the researcher at a later date for analyses. The size, layout, and design of each classroom were described; available equipment, materials, and furniture were noted. Teacher and student interactions and activities were described, including examples of students assisting the teacher or other students, assisting with material or technology, leaving the classroom, or engaging in disruptive or attention-seeking behaviors. Classroom management techniques used during instruction were described.

Member-checks were conducted with each participant following each observation. Participants were asked to review the researcher's notes in order to ascertain the accuracy of the events that transpired and to confirm that terminology used during the lesson was accurately written by the researcher. The researcher was available to clarify any symbols used in the longhand notes but did not provide additional information or comments. If any discrepancies were indicated, the teachers were asked to provide additional information about the lesson, and any discrepancies were indicated in the margins of the field notes. If requested, the teachers were provided a photocopy of field notes and the cover sheet.

Phase IV. The purpose of Phase IV, the postobservation phase, was to conduct interviews with participants following each observation. This face-to-face interview was conducted within five days of each observation, in a location convenient to the participant and observer. Participants were asked to recall the observed lesson and provide responses

to five questions about their instruction. The postobservation interviews were audio recorded for later transcription. The responses were later compared to information obtained during the preobservation interviews and the classroom observations in order to identify any consistencies, inconsistencies, or patterns related to the use of instructional strategies.

Following the completion of the postobservation interview, the researcher described the Experience and Attitude Questionnaire (EAQ) to each participant. The EAQ was a multi-section questionnaire available to participants in paper or electronic format (see Appendix I for the EAQ). The purpose of the EAQ was to determine the participants' knowledge of and attitudes toward using EBPs and instructional strategies and the internal and external factors that influenced their selection. The EAQ also elicited responses to statements and questions about the implementation of EBPs. The questionnaire was developed based on a study conducted with speech-language pathologists (Zipoli & Kennedy, 2005). Participants were asked to complete the EAQ within five days of receipt and return the document to the researcher either by mail or electronically, depending on their preference.

Following the completion of the second classroom observation in Phase IV, arrangements were made to conduct a final interview with participants.

Phase V. Phase V consisted of a final interview conducted in person with each participant at a date and time selected by the participants. The final interviews lasted approximately 20 – 25 minutes and were held in a location convenient for participants, no later than 15 days following the second classroom observation. The interview was

designed to ascertain additional information about the factors that influenced participants' selection and use of instructional strategies. The final interview consisted of seven questions designed so that teachers could identify the types of instructional strategies they preferred to use, the typical frequency and effectiveness of their use of strategies, and indicate what influenced their selection of strategies.

Data Collection

Multiple sources of evidence provided multiple measures of the social phenomenon of interest in this study, the selection and use of EBPs and instructional strategies. Sources of evidence included lesson plans, transcriptions of preobservation interviews, observation field notes and transcripts, postobservation interviews, final interviews, the EAQ, and open-ended participant responses and comments. The research questions, data, collection methods, and methods of analysis are presented in Table 2.

Reflexivity, the process of examining oneself as a researcher and being aware of possible biases and preconceptions, took place during all phases of this study. In this way, consideration was given to how any biases could impact responses to the research questions and interview dynamics (Yin, 2014). It was critical for the researcher to assume a neutral attitude toward all participants due to the multiple interactions that took place during this study. The researcher added reflective notes to interview responses and observation descriptions. In this way, the researcher was able to thoughtfully consider interview responses and interactions during interviews and observations. The interrater reviewer was consulted to help corroborate findings and help identify if any bias had occurred.

Table 2

Research Questions, Data, Collection Methods, and Methods of Analysis

Research Questions <i>What do I need to know?</i>	Data Collection Methods <i>What kind of data will answer the questions?</i>	Analysis Strategies <i>How will the data be analyzed?</i>	Validity Threats <i>What threatens validity?</i>
1.) What EBPs and instructional strategies do special education teachers at the beginning, mid-career, and senior levels state they use when teaching students with HID in the self-contained setting?	<ul style="list-style-type: none"> • Lesson plans Transcriptions: <ul style="list-style-type: none"> • Preobservation interviews – <i>questions:</i> 6a, 6b, 6c • Postobservation interviews - <i>question:</i> 1 • Final interview - <i>question:</i> 2 	Read/examine data sources for EBPs or IS as compared to the Consolidated EBPs and Instructional Strategies (Table A3).	Sample size Researcher bias
2.) What EBPs and instructional strategies do special education teachers at the beginning, mid-career, and senior levels use when teaching students with HID in the self-contained setting?	Transcriptions: <ul style="list-style-type: none"> • Classroom observations 	Read/examine data sources for EBPs or IS as compared to the Consolidated EBPs and Instructional Strategies (Table A3)	Sample size Researcher bias
3.) What external and internal factors do special education secondary teachers at the beginning, mid-career, and senior levels state influence them when deciding which instructional strategies or EBPs they implement when teaching students with HID in the self-contained setting?	Transcriptions: <ul style="list-style-type: none"> • Postobservation interviews – <i>questions:</i> 3, 4 • Final interview - <i>questions:</i> 6a,6b,8 • * EAQ results 	Read/examine data sources for EBPs or IS as compared to the table of Internal/External Influences (Table A4)	<ul style="list-style-type: none"> • Sample size • Accuracy of self-reports • Researcher bias • Possible distortion of events or recall

Data Analysis

Data from all lesson plans and transcripts were analyzed to identify EBPs and instructional strategies in this multiple-case descriptive study utilizing cross-case analysis (Yin, 2014). The definitions used for these terms were as identified at the beginning of this chapter.

The five phases of the current study provided multiple data sources, which included observation of the methods by which teachers delivered instruction to students, taught skills, provided feedback or rewards, and facilitated student learning. The EBPs and instructional strategies stated or observed were described in detail and categorized based on their alignment with those categories identified by Marzano, Pickering, and Pollock (2001) and Scruggs et al. (2010a) (see Appendix J).

Participants were provided with definitions as found in the literature and stated at the beginning of this chapter for EBPs and instructional strategies, with examples and categories of EBPs and instructional strategies from Scruggs et al. (2010a) and Marzano et al. (2001). The data collection sources focused on identifying any teaching technique that could be construed as an instructional strategy. In broadest terms, instructional strategies were described as methods used in teaching to help students learn. A participant being able to differentiate between instructional strategies and EBPs was one consideration in this study. The researcher developed a guide for observable instructional strategies and EBPs based on the work of Marzano et al. (2001) and Scruggs et al. (2010a).

Marzano et al. (2001) conducted a meta-analysis of 120 studies and identified nine instructional strategies having the greatest effect on student achievement. The studies included in the meta-analysis considered the effects of instructional strategies on students from multiple ability levels, including those identified with disabilities. Eleven studies were focused exclusively on the effectiveness of instructional strategies for use with students with disabilities. The instructional strategies identified as most effective and appropriate for use with students with disabilities were operationalized and included variations appropriate for meeting student needs (see Table 3).

Table 3

Effective Instructional Strategies

Guiding Question	Instructional Strategy	Examples
What will be done to help students acquire and integrate knowledge?	Reinforcing effort and providing recognition	High expectations, rewards, praise for effort, encouragement
	Questions, cues, and advance organizers	Graphic organizers, guiding questions, higher level thinking, predicting, drawing conclusions, key vocabulary, concepts and skills
	Nonlinguistic representations	Diagrams, visual tools, pictures, manipulatives, concept maps, drawings, maps
What will be done to help students practice, review, and apply this knowledge?	Summarizing and note taking	Summarization techniques, key concepts, bullets, outlines, clusters, narrative organizers, graphic organizers
	Identifying similarities and differences	Venn diagrams, cause and effect, classifying facts, analogies, compare and contrast organizers
	Generating and testing hypothesis	Thinking processes, investigate, explore, social construction of knowledge, use of inductive and deductive reasoning
	Cooperative learning	Small group review and practice, group projects, partner pairing, debates
	Homework and practice	Review learning at home, parents informed of the work, goals, and objectives

Note. Adapted from *Classroom Instruction That Works: Research-Based Strategies for Increasing Student Achievement* by R. J. Marzano, D. J. Pickering, and J. E. Pollock, 2001 (Alexandria, VA: Association for Supervision and Curriculum Development).

Scruggs et al. (2010a) completed a meta-analysis of studies about with students with HID in content areas and identified eight strategies as highly effective, with overall effect sizes of 1.00 across studies. The strategies were study aids, classroom learning strategies, spatial and graphic organizers, mnemonic strategies, hands-on activities, classroom peers, computer-assisted instruction, and explicit instruction. The instructional strategies were operationalized and included variations appropriate for meeting student needs (see Table 4).

Table 4

Evidence-Based Practices for Students with Disabilities

Evidence-Based Practice	Examples
Mnemonic strategies	Patterns of letters, sounds, or associated ideas that aid people in remembering information
Spatial Organizers	Charts, diagrams, graphs, or other graphic organizers
Classroom Learning Strategies	Study skills instruction, note-taking skills, self-questioning strategies, self-monitoring, summarization, learning strategies
Computer-Assisted Instruction (CAI)	Computer-based applications to deliver drill and practice, strategy instruction, and simulation
Peer Mediation	Peer tutoring and cooperative learning
Study Aids	Teacher-directed and student-directed study guides, advanced organizers, text outlines
Hands-On or Activity-Oriented Learning	Perform experiments, work with the materials being studied to learn concepts
Explicit instruction	Direct teaching, in three strategies: teaching in small steps, guided practice, and independent practice

Note. Adapted from “Do Special Education Interventions Improve Learning of Secondary Content? A Meta-Analysis,” by T. E. Scruggs, M. A. Mastropieri, S. Berkeley, and J. E. Graetz, 2010a, *Remedial and Special Education*, 31, p. 437-449.

The researcher and interrater reviewer used the same criteria to identify what constituted an instructional strategy and EBP, based on the study definitions, and based on those instructional strategies and EBPs identified by Marzano et al. (2001) and Scruggs et al. (2010a). The researcher developed a guide and tally sheet for observable instructional strategies and EBPs based on the work of Marzano et al. (2001) and Scruggs et al. (2010a) (see Table A3). The instructional strategies and EBPs used by participants in this study were categorized based on those works.

This multiple-case study had three participants. Each participant was considered to be a “case” and each “case” was bounded by the following characteristics: secondary-level teacher, teacher of students with HID in self-contained classes, public school employee, and resident of the mid-Atlantic area. Differences between cases were gender and types and years of teaching experience. Comparisons across cases were made based on the use of EBPs and instructional strategies and responses to the EAQ.

Case study research may include physical evidence or documentation, archival records, interviews, direct observations, participant-observations, and physical artifacts (Yin, 2014). The sources of evidence for this case study included the participants’ lesson plans, preobservation interviews, classroom observations, postobservation interviews, responses to the Experience and Attitude Questionnaire (EAQ), and final interview. Case study research may also be enriched by following a design blueprint in order to focus on the data collected and the ways in which the data were analyzed (Rosenbaum, 2002). Based on related literature and previous research results, theoretical propositions (Yin, 2014), or themes, were developed to guide the end analysis of this descriptive case study.

The theoretical themes were: Are experienced or inexperienced teachers more likely to rely on personal experience and peer sharing when selecting EBPs and instructional strategies (Gaughan 2008; Maccini & Gagnon, 2006)? Are experienced or inexperienced teachers more likely to use educational research to guide their instruction (Burns & Ysseldyke, 2009; Gagnon and Maccini, 2007; Morgan et al., 2010)? Are experienced or inexperienced teachers more likely to be affected by external factors such as supervisors, administrators, educational research, and parents when selecting EBPs and instructional strategies (Boardman et al., 2005; Sencibaugh, 2007)? Are teachers with the least experience influenced by administrative directives and parental requests when selecting EBPs and instructional strategies (Boardman et al., 2005)? Theoretical themes assisted in mapping the meaning demonstrated in the participants' responses to interview questions, practices observed during classroom observations, and responses to the EAQ.

Analysis phases. Critical self-reflection by the researcher regarding biases and predispositions occurred across all phases of this study. It was critical for the researcher to assume a neutral attitude toward all participants due to the multiple interactions that took place during this study. The researcher had previously worked with two participants approximately three years prior to the study and was somewhat familiar with their teaching styles and methods. In order to help diminish bias and any presumptions about the participants, the researcher added reflective notes to interview responses and observation descriptions. In this way, the researcher was able to thoughtfully consider if any interview responses or interactions could have been misconceived or misinterpreted. Additionally, the interrater reviewer was consulted to help corroborate findings and

identify if possible bias had occurred. The first phase of analysis consisted of three stages. The first stage defined the cases' (participants') experiences when teaching students with HID in the self-contained settings. Years and types of teaching experiences were identified. Three categories of experience were delineated and the use of EBPs and instructional strategies could be viewed for each level of experience. The second stage focused on mapping meaning and noting patterns. Theoretical themes to extract meaning from participants' responses came from the literature based on how teachers selected EBPs and instructional strategies and what influenced their selection. These themes assisted in mapping the meaning demonstrated in the participants' responses to interview questions and practices observed during classroom observations and noting any patterns. The third stage focused on two important notions: how experience was tied to selecting EBPs and instructional strategies and how teachers' experience with, and attitudes toward, EBPs impacted instruction. This analysis was conducted at the conclusion of all interviews, classroom observations, and completion of the EAQ. This analysis phase consisted of reading lesson plans and identifying any instructional strategies and EBPs included in the plans. Following this, the interview tapes, observation notes, and reflections from the interviews and observations were transcribed, and read multiple times by the researcher. The instructional strategies and EBPs were categorized and tallied using the guide developed by the researcher and based on the work of Marzano et al. (2005) and Scruggs et al. (2010a). Independent of the researcher, the interrater reviewer read the transcripts to identify instructional strategies and EBPs. The results were compared; similarities and differences were discussed with any differences

resolved. The interrater reviewer is described in detail in the participant section. Results from the EAQ were also tallied and consolidated on a printed version of the EAQ.

The participants' narrative comments were analyzed for content that may contribute to answering the research questions. These narrative comments helped to delineate the participants' reasons for selecting and using EBPs and instructional strategies. The narrative comments containing participants' own words helped preserve the essence of the responses during cross-case analysis (Goldstone, 1997). After identifying and categorizing the EBPs and instructional strategies, cross-case comparisons could be made based on any similarities or differences from the data sources.

The second phase of data analysis included the development of data summaries for the individual cases (Yin, 2014). The data summaries consolidated results from background information, lesson plans, transcripts, EAQ results, and narrative comments and sought to give insight into the factors that guided the participants' selection and use of EBPs and instructional strategies. This phase contributed to answering RQ2 and RQ3. Results were examined individually as well as compared to the other cases. In this way, cross-case analysis facilitated recognizing any pattern similarities and differences between participants (Yin, 2014).

The third phase of analysis involved drawing conclusions and subsequently verifying them. Participant feedback and member-checks following the interviews and observations helped the researcher to reduce or clarify any possible misconceptions or inaccuracies.

Reliability, Procedural Integrity, and Validity

Reliability was established through the use of previously developed interview formats (Gaughan, 2008), researcher-developed scripted interview protocols, and the establishment of observation protocols. The EAQ was based on a questionnaire (Zipoli & Kennedy, 2005) previously developed for use with speech and language pathologists. Reliability for the instrument adapted for special education teachers and used in this study was not previously established. The scripted interviews were audio recorded and observation data was reported using longhand notes in order to document teacher instructional statements, describe classroom activities, dialogues between teacher and students, and student comments.

To address reliability issues, categories of EBPs and instructional strategies were defined and compared with the data (Creswell, 2008). Categories were based on the EBPs and instructional strategies identified in responses to interview questions and observations. The interrater reviewer cross-checked all categories in order to provide interrater agreement. The level of consistency between the researcher and interrater reviewer in categorizing data was established with 93% agreement, exceeding the acceptable level of 80% agreement in case study research as indicated by Miles and Huberman (1994). Any differences in categorizing were resolved through discussion between the researcher interrater reviewer and any agreed-upon changes were made.

To address procedural integrity issues, the researcher conducted all interviews and observations and maintained control of all documents and recordings. The audio-recorded interviews were first transcribed by a professional transcription company,

TranscriptionHub, with an accuracy rating of 94%. Following the receipt of completed transcriptions, the researcher compared each transcript to the audio recordings and made any corrections, as appropriate. The audio recordings of the interviews and the transcriptions of the interviews were reviewed until there was 100% agreement. The researcher transcribed field notes and any open-ended responses from the EAQ. The classroom observations were transcribed by the researcher from the observation notes and reviewed by interrater reviewer. The overall agreement level between the researcher and interrater was 95%.

Validity was addressed through triangulation of data and member checks. Triangulation included examining and converging multiple sources and types of data (Creswell, 2008). The first source was transcripts of interviews and observations. The second source was open-ended responses, and the third source was EAQ results to identify terms and categories related to EBPs and instructional strategies. Coding the transcribed interviews and open-ended responses, and analyzing EAQ results provided sources for developing categories of EBPs and instructional strategies. Lesson plans and any materials used during the observations provided an additional data source. Postobservation interview questions, the EAQ, and final interview questions helped determine whether participants remained consistent in their statements regarding the selection and implementation of EBPs and instructional strategies. Participant feedback and member-checks following the interviews and observations helped the researcher to reduce or clarify any possible misconceptions or inaccuracies in order to affirm the participants' responses for validity.

Participants were informed that they would be asked at various phases of this study to review the summations and notes from the observer. Member checks were defined as the opportunity for participants to review all interview transcripts, observation field notes, and overall study results in order to help improve the credibility and validity of the findings (Maxwell, 2005; Yin, 2014). The process of “member checks” was described to each participant following the interviews and observations, and at the conclusion of the study. Participants were asked to review the findings and to affirm that the summaries reflected what they recalled from the interviews and observations or make any changes. Yin (2014) described member checking as the best method of establishing credibility because using member checks allowed the participants and the researcher to review the accuracy of the transcripts. For the purpose of this study, member checks were utilized in order to provide an additional opportunity to identify findings that were credible.

Interrater reviewers. Two interrater reviewers read and categorized instructional strategies from the interview and observation transcripts, including the researcher and one additional interrater reviewer. Training for identifying categories was provided in order to develop consistency in identifying terminology associated with EBPs and instructional strategies. Training consisted of reading a researcher-developed interview transcript and researcher-developed observation transcript, and identifying terminology related to EBPs and instructional strategies. In order to determine what constituted an EBPs or instructional strategy, the definitions previously provided to participants for instructional strategy and EBP were reviewed. The EBPs and instructional strategies stated by

participants or observed by the researcher were categorized based on those definitions as well as the EBPs and instructional strategies previously identified by Marzano et al. (2001) and Scruggs et al. (2010a). The interrater reliability for training was 97%. Following training, interview and observation transcripts were reviewed and coded independently by the researcher and interrater reviewer. Transcripts were read through a second time by each reviewer to improve accuracy by identifying any terms or categories that may have been overlooked. The interrater reliability for categorizing transcripts and observations was 95%.

Validity threats to the current study included small sample size, possible researcher bias, and accuracy of participant self-reports. These threats limit generalizability to other situations or settings.

Summary

This chapter provided a detailed summary of the procedures, participants, and data collection measures used to conduct this research and analyze the results of this multiple-case descriptive study utilizing cross-case analysis. Various methods were used to evaluate results from the transcriptions of interviews, observations, the EAQ, and open-ended responses. The results of this study are presented in Chapter 4.

Chapter 4: Results

This chapter presents the results of a multiple-case, descriptive case study that examined how three secondary-level special educators selected and implemented instructional strategies when working with students with high-incidence disabilities (HID) in the self-contained special education setting. Students with HID are typically identified as having a learning disability (LD), emotional disability (ED), or other health impairment (OHI).

The purpose of Chapter 4 is to report the results from what EBPs and instructional strategies beginning, midcareer and senior special education teachers stated they used, what EBPs and instructional strategies were observed in their classes, and to identify what influenced their selection of EBPs and instructional strategies. This five-phase study was designed to address the following Research Questions (RQ) and to compare results between participants and across cases.

Research Questions

1. Research Question 1. What EBPs and instructional strategies do special education teachers at the beginning, midcareer, and senior levels state they use when teaching students with HID in the self-contained setting?

2. Research Question 2. What EBPs and instructional strategies do special education teachers at the beginning, midcareer, and senior levels use when teaching students with HID in the self-contained setting?
3. Research Question 3. What external and internal factors do special education secondary teachers at the beginning, midcareer, and senior levels state influence them when deciding which EBPs or instructional strategies they implement when teaching students with HID in the self-contained setting?

Three participants were considered as individual cases and were bounded by the following characteristics: secondary-level teachers, teachers of students with HID in self-contained classes, public school employees, and residents of the mid-Atlantic area. Differences were gender, types of teaching experience, and years of teaching experience. Six data sources were used during this study to identify the EBPs and instructional strategies participants stated they would use, and those actually implemented during instruction. The data sources were: lesson plans, preobservation interviews, observations, postobservation interviews, final interview, and Experience and Attitude Questionnaire (EAQ).

Two classroom observations took place for each participant, and the researcher identified the EBPs and instructional strategies that were used during instruction. All instructional methods identified in lesson plans, interviews, and observation transcripts were extracted from the text and analyzed by comparing and matching to determine if they aligned with the EBPs or instructional strategies identified in the Consolidated EBPs and Instructional Strategies Checklist (see Table H3) and compiled from the research

conducted by Marzano et al. (2001) and Scruggs et al. (2010a). In several cases, the participants' unique terminology was used to describe the EBPs and instructional strategies they implemented when they did not align with those in the table. Participants also identified the internal and external influences that impacted their selection of EBPs and instructional strategies in response to Research Question 3.

Data Sources and Research Questions

Six data sources were used to answer the Research Questions. The data sources included: (a) two lesson plans, one from each observed lesson; (b) two preobservation interviews held prior to each classroom observation; (c) classroom observations, (d) two postobservation interviews held following each classroom observation; (e) one final interview, and (f) the Experience and Attitude Questionnaire (EAQ). Responses for all data sources were analyzed to identify any EBPs or instructional strategies as compared to the Consolidated EBPs and Instructional Strategies Checklist (see Table H3). Participant responses for some data sources were combined unless otherwise noted.

The lesson plan was selected as a data source because it provided a guide for the teacher's instruction in the classroom and may have contained EBPs and instructional strategies preidentified by the participants for use during instruction. Examining the lesson plans provided the researcher the opportunity to determine if EBPs or instructional strategies were stated in writing and preselected by the participants when planning lessons.

The preobservation interviews were selected as a data source because the participants had the opportunity to orally state the EBPs or instructional strategies

planned for use during instruction. The researcher identified the terminology the participants used and recorded the stated responses.

The postobservation interviews provided the opportunity for the participants to state the EBPs and instructional strategies they implemented during the observed lesson. The researcher recorded the responses stated by the participants and utilized the participants' terminology.

The classroom observations were selected as a data source so the researcher could observe the participants implementing EBPs and instructional strategies to determine if they matched those previously identified in the lesson plans, preobservation interviews, and postobservation interviews.

The final interview provided the participants with an additional opportunity to state the EBPs and instructional strategies that he or she implemented most frequently during instruction.

The Experience and Attitude Questionnaire (EAQ) was a questionnaire comprised of 30 questions that sought to identify what influenced participants when selecting EBPs and instructional strategies, how frequently participants used EBPs, and participants' perceptions of using EBPs. The EAQ was selected as a data source because participants were able to respond independently to a variety of questions about internal and external influences as well as questions about EBPs. The questions were designed to assist participants in refining their responses to what may influence their selection of EBPs and instructional strategies. Participants responded using a Likert rating scale with the

following values: (1) Strongly agree, (2) Agree, (3) Disagree, (4) Strongly disagree, and (5) Unfamiliar to me.

The researcher used the six data sources to extract the teachers' stated and identified EBPs or instructional strategies as the basis for answering the Research Questions. The data sources and methods of analysis were the same for all participants. Results with descriptions of data sources are reported for individual participants, followed by results across participants in this multi-case study.

Participant A

Research question 1. Research Question 1 was about what EBPs or instructional strategies special education teachers at the beginning, midcareer, and senior levels stated they used when teaching students with HID in the self-contained setting. Participant A was a 34-year-old female in her first year of teaching. During this study, she taught English 9 to students with HID in the self-contained setting.

Using the first data source, Participant A's lesson plans were analyzed to identify whether any EBPs or instructional strategies were stated in writing. No EBPs or instructional strategies were found in either lesson plan after reading and examining them.

The second data source used to answer Research Question 1 was the preobservation interviews. These interviews were conducted prior to each classroom observation. A printed copy of the definitions of instructional strategies and EBPs, including examples of each, as used in this study, were handed to Participant A prior to each of the two preobservation interviews (see Tables 5 and 6). On both occasions, she

read and reviewed the definitions and examples, and when asked if she had any questions, said she did not.

Table 5

Participant Definitions and Examples: Evidence-Based Practices

Evidence-Based Practice	Examples
Mnemonic Strategies	Patterns of letters, sounds, or associated ideas that aid people in remembering information
Spatial Organizers	Charts, diagrams, graphs, or other graphic organizers
Classroom Learning Strategies	Study skills instruction, notetaking skills, self-questioning strategies, self-monitoring, summarization, learning strategies
Computer-Assisted Instruction (CAI)	Computer-based applications to deliver drill and practice, strategy instruction, and simulation
Peer Mediation	Peer tutoring and cooperative learning
Study Aids	teacher-directed and student-directed study guides, advanced organizers, text outlines
Hands-On or Activity-Oriented Learning	Perform experiments, work with the materials being studied to learn concepts
Explicit Instruction	Direct teaching, in three strategies: teaching in small steps, guided practice, and independent practice

Note. Evidence-based practice (EBP): An educational evidence-based practice is an instructional strategy, intervention, or teaching program based on empirically supported evidence that has resulted in consistent positive results when experimentally tested (Mesibov & Shea, 2011). Adapted from “Do Special Education Interventions Improve Learning of Secondary Content? A Meta-Analysis,” by T. E. Scruggs, M. A. Mastropieri, S. Berkeley, and J. E. Graetz, 2010a, *Remedial and Special Education*, 31, p. 437-449.

Table 6

Participant Definitions and Examples: Instructional Strategies

Instructional Strategy	Examples
Reinforcing Effort and Providing Recognition	High expectations, rewards, praise for effort, encouragement
Questions, Cues, and Advance Organizers	Graphic organizers, guiding questions, higher level thinking, predicting, drawing conclusions, key vocabulary, concepts and skills
Nonlinguistic Representations	Diagrams, visual tools, pictures, manipulatives, concept maps, drawings, maps
Summarizing and Note Taking	Summarization techniques, key concepts, bullets, outlines, clusters, narrative organizers, graphic organizers
Identifying Similarities and Differences	Venn diagrams, cause and effect, classifying facts, analogies, compare and contrast organizers
Generating and Testing Hypothesis	Thinking processes, investigate, explore, social construction of knowledge, use of inductive and deductive reasoning
Cooperative Learning	Small group review and practice, group projects, partner pairing, debates
Homework and Practice	Review learning at home, parents informed of the work, goals, and objectives

Note. Instructional strategy: Instructional strategies are methods used in teaching to help students learn. Instructional strategies are the approaches a teacher takes to engage students in learning, probe critical thinking skills, keep them on task, engender sustained and useful classroom interaction, and enable and enhance their learning of course content, but are not always based on research (Mitchell, 2007). Adapted from *Classroom Instruction that Works: Research Based Strategies for Increasing Student Achievement*, by R. J. Marzano, D. J. Pickering, and J. E. Pollock, 2001, Alexandria, VA: Association for Supervision and Curriculum Development.

During the preobservation interviews, Participant A was queried about what EBPs or instructional strategies she would use. Dialogue from the preobservation interviews was transcribed, and those notes were analyzed for EBPs or instructional strategies. In answering Research Question 1, during the first preobservation interview, Participant A stated that she intended to use the following EBPs or instructional strategies: (a) advance organizer; (b) summarizing and note taking; (c) cooperative learning; and (d) rewards and praise. In answering Research Question 1 during the second preobservation interview, Participant A stated that she intended to use the following EBPs or instructional

strategies: (a) advance organizer; (b) PowerPoint; (c) quiz; (d) group reading and sharing; (e) cooperative learning; (f) behavior modification; and (g) rewards and praise.

Participant A provided responses to the interview questions, identifying the specific material, EBPs, and instructional strategies she planned to use during the first classroom observation. Her comments included the following stated EBPs and instructional strategies: quiz, advance organizer, summarizing and note taking, cooperative learning, and rewards and praise.

They will take the quiz first because that's usually when I can get them to focus most, we'll do walk-up to the board edits; we have about 45 minutes set aside for research using their notes and organizer, and that will be one-on-one with my IA [instructional assistant]. I also want you to know that they are 14- and 15-year-old adolescents—immature boys, so it's a very active room. I've got students who will get up and walk across the room. As long as they're working on their papers, I do allow them to listen to music sometimes to stay focused on their own work. I use rewards and praise a great deal—they need it.

Participant A provided responses to the interview questions, identifying the specific material, EBPs, and instructional strategies she planned to use during the second classroom observation. Her comments included the following stated EBPs and instructional strategies: PowerPoint, advance organizer, note taking, behavior modification, group reading and sharing, and cooperative learning.

I have a very specific PowerPoint presentation for them, designed with their abilities in mind; they have fill-in-the-blank notes to take so they stay focused.

For the research, we've been working on the research papers for about two weeks so they work at their own pace, and I work one-on-one with them as needed. So I'll be using the PowerPoint, the projector...they have research folders and notecards in pockets. They also have advance organizers.

The third data source for Research Question 1 was the postobservation interviews. The postobservation interview was held following each of the two classroom observations and provided an additional opportunity for Participant A to state her use of EBPs or instructional strategies from the observed lesson. Participant A was asked to state what strategies she actually used during instruction. Responses were analyzed using the Consolidated EBPs and Instructional Strategies Checklist (see Table H3) to identify any stated EBPs or instructional strategies.

In answering Research Question 1 during the first postobservation interview, Participant A stated that she used the following EBPs or instructional strategies: (a) advance organizer; (b) summarizing and note taking; (c) cooperative learning; and (d) rewards and praise. In answering Research Question 1 during the second postobservation interview, Participant A stated she used the following instructional strategies during instruction: (a) advance organizer; (b) PowerPoint; (c) quiz; (d) group reading and sharing; (e) cooperative learning; (f) behavior modification; and (g) rewards and praise. Exemplars of Participant A's responses during the postobservation interviews included the following:

We used the advance organizer for their research paper to help them organize their ideas and then put them on paper; summarizing and note taking we used on

their literary terms. The students used blank notes to fill in based on what we were discussing with the PowerPoint about literary learning. Cooperative learning happened probably more naturally than intentionally. I have to be flexible with the kids and go in the direction that the class seems to go or I lead them along with learning with me. And the rewards and praise, that kind of comes naturally for students with disabilities. I try to make sure I lead up with praise and follow with praise, so they don't see correction as a negative. I think positive motivation works much better than negative motivation.

The fourth data source that answered Research Question 1 was the final interview. The final interview was held following the second classroom observation. Participant A was queried about the instructional strategies she used most frequently in her classroom. Responses were analyzed for use of EBPs or instructional strategies. In answering Research Question 1, Participant A stated the EBPs and instructional strategies she most frequently used were: (a) behavior management; (b) directed questions; (c) cooperative learning; (d) lecture; (e) discussion; and (f) kinesthetic learning. Participant A stated the EBPs or instructional strategies she used during instruction and they are summarized in Table 7.

Table 7

Participant A: Summary of Stated EBPs or Instructional Strategies for Research Question 1

Lesson Plan	Preobservation Interview	Postobservation Interview	Final Interview
Lesson Plan 1 No EBPs or instructional strategies identified	Interview 1 <ul style="list-style-type: none"> • advance organizer • summarizing and note taking • cooperative learning • rewards and praise 	Interview 2 <ul style="list-style-type: none"> • advance organizer • summarizing and note taking • cooperative learning • rewards and praise 	<ul style="list-style-type: none"> • behavior management • directed questions • cooperative learning • lecture • discussion • kinesthetic learning
Lesson Plan 2 No EBPs or instructional strategies identified	Interview 2 <ul style="list-style-type: none"> • advance organizer • technology - PowerPoint • quiz • group reading and sharing • cooperative learning • behavior modification • rewards and praise Changes/Adjustments <ul style="list-style-type: none"> • none 	Interview 2 <ul style="list-style-type: none"> • advance organizer • technology - PowerPoint • quiz • group reading and sharing • cooperative learning • behavior modification • rewards and praise Changes/Adjustments <ul style="list-style-type: none"> • emphasis on behavior management 	

Note. EBP = evidence-based practice.

Summary for Participant A research question 1. The focus of Research

Question 1 was to identify the EBPs and instructional strategies participants stated they used when teaching students with HID in the self-contained setting. Participant A did not identify any instructional strategies on her lesson plans to be used during instruction, but rather used her lesson plans as a broad instructional guide with time allotments added for structure. Prior to each observation, Participant A was able to preidentify how she planned to teach her students, the materials she expected to use, and the instructional strategies she anticipated implementing during instruction. During the postobservation interviews, Participant A described the instructional strategies she most frequently used during instruction (see Table 7).

Research Question 1 was designed to identify the specific EBPs and instructional strategies teachers stated they used during their instruction. Through classroom observations, Research Question 2 was designed to determine what EBPs and instructional strategies teachers used when teaching students with HID in the self-contained setting.

Research question 2. Research Question 2 was about what EBPs and instructional strategies special education teachers at the beginning, midcareer, and senior levels used when teaching students with HID in the self-contained setting. The classroom observations were selected as a data source because they provided an authentic opportunity for the researcher to see the teacher implement the EBPs or instructional strategies they stated they used. Observation transcripts were read and examined to identify and extract any observed EBPs or instructional strategies. Results for this data

source were analyzed to identify any EBPs or instructional strategies as compared to the Consolidated EBPs and Instructional Strategies (see Table H3).

Classroom observation 1. The observer was seated in the back with a panoramic vantage point during a 90-minute English 9 class. An instructional assistant (IA) was present to assist with the class. The class was made up of eight students; two were female and six were male. The observer was prepared with supplies to take longhand notes; no recordings were made in the presence of students. Participant A had stated during the preobservation interview that she would be using advance organizers, summarizing and note taking, cooperative learning, and rewards and praise throughout her instruction. The observer took detailed notes describing the activities and dialogue that took place in the classroom.

The transcripts from the first classroom observation were analyzed for Participant A's use of EBPs or instructional strategies. In answering Research Question 2, the researcher observed Participant A using: (a) advance organizers; (b) summarizing and note taking; (c) cooperative learning; and (d) rewards and praise.

During the first observation, Participant A said the following, which evidenced some of the EBPs or instructional strategies observed:

Okay, you now need to take out your research work and continue using your note cards. You've been working diligently—continue working at your own pace. Be sure you are using your organizers and note cards to put in your references.

Everyone will be given their study packet with literary terms that we worked on previously. You can work with a partner if you need to. You've got a lot of notes

to work from—this paper will practically write itself once you get going!

Remember, your paper is due soon and you have to keep working at this. I know some of it is tedious but you have to keep working on it.

Classroom observation 2. The second observation took place approximately two weeks after the first observation and again was a 90-minute English 9 class in the self-contained setting. The classroom location and participants were the same as during the first observation. The teacher, IA, and seven students were present; five were male and two were female. One male student was absent at the start of class. Participant A had previously stated that she would be using the following: advance organizer, PowerPoint presentation modified for student ability levels, quiz, *Romeo and Juliet* play modified for student ability levels, behavior modification, and rewards and praise throughout her instruction. The observer took detailed notes describing the activities and dialogue that took place in the classroom.

The transcripts from the second classroom observation were analyzed for Participant A's use of EBPs or instructional strategies. In answering Research Question 2, Participant A was observed by the researcher using: (a) advance organizers; (b) quiz; (c) group reading and sharing; (d) cooperative learning; and (e) rewards and praise. Participant A was observed stating the following which evidenced some of the EBPs or instructional strategies observed:

Everyone has their Act 2 question sheets? Pull them out—I need to see them. This packet is a test grade. We are not doing a test on *Romeo and Juliet*. Turn to Scene 3, page 27. Okay, let's stop and move our desks in a semicircle so we can work

together and be close to each other. Are you done with your question packet? If you are, your intro and references for your research paper are due tomorrow. We have several things to work on. Where are your packets? I don't think I put any restrictions on what you need to read. You're doing a great job so far – keep going!

During the postobservation interview, Participant A was asked to recall what EBPs and instructional strategies she used during instruction and what may have been added or deleted. Participant A recalled incorporating several of the stated strategies throughout her instruction but noted that she was unable to accomplish all she had set out to do during this class. She recognized that her written lesson plans with broad topics and time allotments were not always accomplished, and at times, management of behavior modification was relied on more than any other EBPs or instructional strategies due to unpredictable student behavior.

We did not get to the PowerPoint. I had to modify what we were doing based on the students' behaviors and moods. Cooperative learning goes on only when the students cooperate with each other. That doesn't always happen. I wanted to break up the seriousness of the reading and be flexible with the students. Their assignments are all modified based on students' experience. Of course, it's all driven by the SOLs [standards of learning tests] but also driven by students' ability levels. Behavior modifications have to be made all the time due to each kid's situation. They are all different and needy. The rewards and praise come naturally. Everything I planned to do was accomplished today with the exception

of the PowerPoint. There was just too much going on with the kids today. I relied heavily on the advance organizers again today for the research papers and the prepared material for *Romeo and Juliet*. I had to use behavior modification a great deal!

Summary for Participant A research question 2. Research Question 2 focused on identifying what instructional strategies participants used during their instruction, with two classroom observations and two postobservation interviews contributing to the findings. Participant A was the first-year teacher who taught English 9 to students with HID in the self-contained setting. She was proficient teaching the subject matter and incorporated several instructional strategies into her teaching, including direct instruction, collaborative learning, behavior modification, and rewards and praise. She did not use detailed lesson plans but had clear objectives in mind when teaching. Participant A was recognized several of her limitations, including her inexperience, but she also said that she was very comfortable working with students with disabilities. She said she tried to create a positive environment during instruction and supported students who struggled with reading and writing. Although Participant A noted she relied on her knowledge of student needs and abilities when planning instruction, she was unfamiliar with the advantages of using EBPs and relied primarily on colleagues for help with guiding her instruction and determining instructional strategies.

Research question 3. Research Question 3 queried what internal and external factors influenced participants when determining the instructional strategies or EBPs they implemented in their instruction with students with HID in the self-contained setting.

Data sources were examined and analyzed to identify any internal or external influences as compared to those identified by Boardman et al. (2005) (see Table 8).

Table 8

Internal and External Influences When Selecting EBPs and Instructional Strategies

Internal	External
Personal experience	Administrative requirements
Personal preference	Supervisor
Teacher comfort level	Academic requirements
Years of teaching	Standardized testing
Tried and true	Parental requests
	Student needs
	College preparation
	Curriculum mandates
	Student test data
	Peers
	Educational research
	Internet sources
	Time constraints
	Professional development

Note. Adapted from “*Special Education Teachers’ Views of Research-Based Practices*” by A. G. Boardman, M. E. Arguelles, S. Vaughn, M. T. Hughes, and J. Klingner, 2005, *Journal of Special Education*, 39, pp. 168-180.

Three data sources were used to answer Research Question 3: (a) postobservation interview; (b) final interview; and (c) Experience and Attitude Questionnaire (EAQ).

The first data source was two postobservation interviews, analyzed for Participant A’s stated internal and external influences when selecting EBPs and instructional strategies.

In answering Research Question 3 during the first postobservation interview, Participant A stated she was influenced by: (a) grade-level requirements for teaching English 9; (b) peers; (c) other professionals; and (d) personal experience. In answering Research Question 3 during the second postobservation interview, Participant A stated she was

influenced by: (a) grade-level requirements for teaching English 9; (b) peers; (c) standardized testing requirements; and (d) administrative requirements.

The second data source was the final interview, analyzed for Participant A's stated internal and external influences when selecting EBPs and instructional strategies. In answering Research Question 3, Participant A stated she was influenced by: (a) student needs, attitudes, and behaviors; (b) lack of time; (c) other professionals, and (d) peers. In answering Research Question 3, Participant A responded to the interview questions in the following manner:

I have had assistance from the library staff and at their recommendation; I used the note taking and fill-in-blanks vocabulary packets, which work pretty well for my students. From my own experience, I decided to use interactive participation in learning, with me guiding the students and it is much more effective. I rely a lot on the other teachers in the English department and used one of their pacing guides in order to ensure I teach everything based on SOL requirements. The journalism teacher has been really helpful, too. The school administration is usually very happy with what I do. I am observed weekly and sometimes get recommendations from the Assistant Principal for Special Education. Student needs, student attitudes, and behaviors influence me the most. I try to follow the guidelines for SOL instruction and since we are required to write a research paper at the ninth grade level, I use whatever strategies may help the students to learn and stay focused. I've really just relied on other teachers to help me out. Some things they give me are research based. I feel that a couple of years from now, I'll

be in a better position to truly understand better and will have taught the subjects enough to use the research. I depend more on my colleagues to give me guidance and I do my own research on the Internet. I look for different things that might work. I do my own thing. And in SPED [special education], my students are very unique. As in any SPED class, what happens in one English class may not work in another. I really don't know if the strategies I use are EBPs and with my population of students, it really doesn't matter.

The third data source was the Experience and Attitude Questionnaire (EAQ). The EAQ was a questionnaire comprised of 30 questions that sought to identify what influenced participants when selecting EBPs and instructional strategies, how frequently participants used EBPs, and participants' perceptions of using EBPs. In answering Research Question 3 using the EAQ responses, Participant A stated she was influenced by: (a) personal experience; (b) peers; (c) other professionals; (d) professional development; (e) teacher preparation program; (f) Internet resources; and (g) administrative support. Based on her responses to the EAQ seeking to identify how frequently participants used EBPs, Participant A stated that in general, she used EBPs occasionally, approximately two or three days per week, with some classes.

Summary for Participant A research question 3. Research Question 3 was about what internal and external factors influenced participants when determining the instructional strategies or EBPs they implemented in their instruction with students with HID in the self-contained setting. Participant A incorporated several EBPs and instructional strategies into her teaching, including direct instruction, cooperative

learning, advance organizers, behavior modification, and rewards and praise. The internal or external factors that most influenced her selection of instructional strategies and EBPs were student needs, student attitudes, and behaviors. SOL requirements also impacted her selection and use of instructional strategies and EBPs.

Based on responses to the EAQ, Participant A agreed that EBP should be used when teaching students with disabilities. She disagreed, however, that she had sufficient time to implement the EBPs necessary to meet the needs of her students. Participant A agreed that she had the administrative support and sufficient resources needed to implement EBPs. Participant A indicated that she relied primarily on colleagues and school professionals for help with guiding her instruction and providing her with instructional material. She responded to the EAQ queries regarding her use of educational research by indicating that she did not use educational research at all but agreed that EBPs improve academic results for students with disabilities.

Participant B

Research question 1. Research Question 1 was about what EBPs or instructional strategies special education teachers at the beginning, midcareer, and senior levels stated they used when teaching students with HID in the self-contained setting. Participant B was a 47-year-old male with 15 years' teaching experience. During this study, he taught World History II and U.S. History to students with HID in the self-contained settings.

The first data source to help answer Research Question 1 was two lesson plans. Participant B's lesson plans were analyzed to identify any EBPs or instructional strategies. Participant B included the following EBPs and instructional strategies in his

first lesson plan: (a) check for understanding; (b) direct instruction; (c) direct questioning; (d) comparing characters; (e) ongoing assessment; (f) teaching higher order thinking skills; (g) identifying similarities and differences; (h) guided questions using an advance organizer; and (i) still pictures for nonlinguistic representation. In the second lesson plan, Participant B included the following EBPs and instructional strategies: (a) guided questioning and review; (b) advance organizer and partial notes; (c) PowerPoint presentation; (d) instructional and informational summaries; and (e) classwork/homework for ongoing assessment. Participant B incorporated specific EBPs and instructional strategies in his lesson plans along with descriptions of the instruction and structure for the lessons. Two variations of commercially prepared lesson plan formats were used.

The second data source used to answer Research Question 1 was the preobservation interviews. These interviews were conducted prior to each classroom observation. A printed copy of the definitions of instructional strategies, EBPs, and examples of each, as used in this study, were handed to Participant B prior to each interview (see Tables 5 and 6). He read and reviewed the definitions and examples, and when asked if he had any questions, stated that he did not.

During the preobservation interviews, Participant B was queried about what EBPs or instructional strategies he would use. Dialogue from the preobservation interviews was transcribed, and those notes were analyzed for EBPs or instructional strategies. In answering Research Question 1 during the first preobservation interview, Participant B stated that he intended to use the following EBPs and instructional strategies: (a) PowerPoint; (b) direct instruction; (c) teaching higher order thinking skills; (d)

identifying similarities and differences; (e) guided questions using an advance organizer; and (f) still pictures for nonlinguistic representation. In answering Research Question 1 during the second preobservation interview, Participant B stated that he intended to use the following EBPs or instructional strategies: (a) guided questioning and review of the previous lesson; (b) advance organizer; (c) partial notes; and (d) informational summaries. In answering Research Question 1 during the first preobservation interview, Participant B stated the following:

I wanted to create more of a deeper understanding through the movie, because the movie is so powerful. And so I ask questions based on values and ethics and the dilemmas that people are faced with, some of them simple and then some of them not so simple. And then later on, as we get more into depth of character analysis, I'm going to assess them with short writing assignments. We'll start with the basic framework. There will be no notes to be written; this portion of the unit today will require them not to write anything. It's about their examination of themselves based on the situations I'm going to put them in. And so there will be a lot of questioning and discussion.

Participant B provided responses to the interview questions, identifying the specific material, EBPs, and instructional strategies he planned to use during the second classroom observation. In answering Research Question 1 during the second preobservation interview, Participant B stated the following:

For the first part, I will definitely be using my questioning with the review in order to reinforce what we discussed yesterday. We'll have a short section on

summarizing and note taking and then I'll provide skeleton notes. I select the terminology and they just fill it in. The PowerPoint will have two parts; one is general information and the next is key information the students should write into their notes. And I use something called history shorts which is a one page summary followed by several pages of questions and a crossword puzzle.

The third data source that answered Research Question 1 was the postobservation interviews. The postobservation interview was held following each of the two classroom observations and provided an additional opportunity for Participant B to state his use of EBPs or instructional strategies during the observed lesson. Participant B was asked to state what strategies he actually used during instruction. Responses were analyzed using Tables 5 and 6 and the Consolidated EBPs and Instructional Strategies Checklist (see Table H3) to identify any EBPs or instructional strategies.

In answering Research Question 1 during the first postobservation interview, Participant B stated that he used the following EBPs or instructional strategies: (a) check for understanding; (b) direct instruction; (c) direct questioning; (d) comparing characters; (e) ongoing assessment; (f) teaching higher order thinking skills; (g) identifying similarities and differences; (h) guided questions using an advance organizer; and (g) still pictures for nonlinguistic representation.

In answering Research Question 1 during the second postobservation interview, Participant B stated he used the following EBPs or instructional strategies during instruction: (a) guided questioning and review; (b) advance organizer and partial notes;

(c) PowerPoint presentation; (d) instructional and informational summaries; and (e) classwork/homework for ongoing assessment.

Participant B described his use of strategies following the first observation as follows:

I did spend more time on our discussion than actual photos, but in order to cover the review, I had to go back to a few slides with photos and refresh their [students'] memory and then of course, we had the movie, so I would say that all were accomplished in some form, timing may have been off, but everything I had planned was used.

Participant B was asked to recall the strategies planned for use during the observed lessons and indicate if any strategies had been added or removed. He described using the same strategies he had preidentified and had not added any additional strategies. He incorporated technology into his instruction with a focus on developing students' higher level thinking skills and was able to identify with great detail the instructional strategies he implemented and describe their effectiveness.

The fourth data source that answered Research Question 1 was the final interview. The final interview was held following the second classroom observation. Participant B was queried about the instructional strategies he used most frequently in his classroom. Responses were analyzed for use of EBPs or instructional strategies. In answering Research Question 1, Participant B stated the EBPs and instructional strategies he most frequently used were: (a) technology; (b) direct/discovery instruction; (c) questioning; (d) advance organizers; (e) higher order thinking; and (f) behavior management.

Participant B described using technology to support direct/discovery instruction and questioning. He frequently utilized advance organizers to make his instruction meaningful to students and emphasized teaching higher order thinking by encouraging students to relate historical events and situations to their own lives. When asked about the instructional strategies used most frequently in his instruction, Participant B recounted what he used during the lesson observed but also what he used in other situations.

Well, history can't be just memorizing facts and dates and things like that. So I use a lot of discovery questioning to get students to use higher order thinking and develop their thinking skills in general. I do things like think, pair, share. I do think strategies where the kids are very successful and they work in very small groups; not mainly groups, but more as partners. Sometimes that works very well with them.

Participant B stated the EBPs or instructional strategies he used during instruction and they are summarized in Table 9.

Table 9

Participant B: Summary of Stated Evidence-Based Practices or Instructional Strategies for Research Question 1

Lesson Plan	Preobservation Interview	Postobservation Interview	Final Interview
Lesson Plan 1 <ul style="list-style-type: none"> • check for understanding • direct instruction • direct questioning • comparing characters • ongoing assessment • teaching higher order thinking skills • identifying similarities and differences • guided questions using an advance organizer • still pictures for nonlinguistic representation 	Interview 1 <ul style="list-style-type: none"> • check for understanding • direct instruction • direct questioning • comparing characters • ongoing assessment • teaching higher order thinking skills • identifying similarities and differences • guided questions using an advance organizer • still pictures for nonlinguistic representation 	Interview 1 <ul style="list-style-type: none"> • check for understanding • direct instruction • direct questioning • comparing characters • ongoing assessment • teaching higher order thinking skills • identifying similarities and differences • guided questions using an advance organizer • still pictures for nonlinguistic representation 	<ul style="list-style-type: none"> • technology • advance organizers • higher order thinking • behavior management
Lesson Plan 2 <ul style="list-style-type: none"> • guided questioning and review • advance organizer and partial notes • PowerPoint presentation • instructional and informational summaries • classwork and homework for ongoing assessment 	Interview 2 <ul style="list-style-type: none"> • guided questioning and review • advance organizer and partial notes • PowerPoint presentation • instructional and informational summaries • classwork and homework for ongoing assessment 	Interview 2 <ul style="list-style-type: none"> • guided questioning and review • advance organizer and partial notes • PowerPoint presentation • instructional and informational summaries • classwork and homework for ongoing assessment 	
	Changes/Adjustments <ul style="list-style-type: none"> • SOL extension questions 	Changes/Adjustments <ul style="list-style-type: none"> • time adjustments 	

Summary of Participant B research question 1. The focus of Research Question 1 was to identify the EBPs and instructional strategies participants stated they used when teaching students with HID in the self-contained setting. Participant B was an experienced teacher who had worked with students with disabilities for 15 years. He described his students' disabilities and instructional needs in great detail. He used descriptive lesson plans to guide his instruction and identified the EBPs and instructional strategies that he would implement. Prior to each observation, Participant B was able to describe how his students learned, what instructional strategies supported their needs, and which materials would be most meaningful. During the postobservation and final interviews, Participant B described the instructional strategies he most frequently used during instruction (see Table 9).

Research question 2. Research Question 2 was about what EBPs and instructional strategies special education teachers at the beginning, midcareer, and senior levels used when teaching students with HID in the self-contained setting. Observation transcripts were read and examined to identify and extract any observed EBPs or instructional strategies. Results for this data source were analyzed to identify any EBPs or instructional strategies as compared to Tables 5 and 6 and the Consolidated EBPs and Instructional Strategies (see Table H3).

Classroom observation 1. The first observation was a 90-minute World History section and students were in the 10th grade. Participant B had stated during the first preobservation interview that he would be using direct instruction, still pictures and character descriptions, and questioning to help students develop higher level thinking

skills. The focus of the lesson was to teach students to do self-examination based on their own moral and ethical values. The class was comprised of five students; three students were male and two students were female. Participant B displayed three prepared written ethical and moral dilemmas on the whiteboard and read and discussed each with the students. After extensive dialogue with the students, he continued questioning, which evidenced some of the EBPs or instructional strategies observed: “It’s a difficult choice. Why don’t the Jews just run from the Nazis, or charge the guards? There were more Jews than Nazis but they didn’t run. When does doubt cloud your mind—is this really happening—how should I react? It’s important to understand now.”

Classroom observation 2. The second observation was a 90-minute World History section and students were in the 10th grade. Participant B had indicated during the second preobservation interview that he would be using guided questioning and review, advance organizer and partial notes, PowerPoint presentation, instructional and informational summaries classwork, and homework for ongoing assessment. The observer was seated on the left side of the room, in the back with a clear vantage point. The class was comprised of seven students; five students were male and two students were female. A female IA also entered the room. Participant B set up the PowerPoint and displayed six SOL Extension Questions related to the class lesson. He began reading the questions and engaging the students in discussion. Participant B was observed stating the following which evidenced some of the EBPs or instructional strategies observed:

What if you knew someone who had a job who could get away with anything and they never got in trouble because their father owned the business. And what if you

worked there and you could not get a promotion no matter how hard you worked?

And what if they kept taking things away from you but you could not complain to anyone and no one cared if it was fair or not? How would you feel?

Students responded that they would feel mad and would probably want to hurt someone!

Participant B proceeded to draw a diagram on the whiteboard demonstrating the percentage of people who had specific ranks in France just prior to the French Revolution. Participant B drew correlations between what the students knew in their current lives to the precursors to the French Revolution. Participant B continued engaging the students in discussion. “What are all the other people in the countries of Europe doing while this is all going on? They want to stop the French Revolution because they are worried the same thing might happen in their countries. The kings of the other countries don’t want to get killed!”

Participant B then asked the students to look at the notes on the PowerPoint listing the background and causes of the French Revolution. The students had copies of the PowerPoint notes and were instructed to write any additional information they learned as they were listening to the discussion. Participant B continued presenting information in a lecture format and interjected with questions and explanations. At the conclusion of the PowerPoint presentation, the students were guided to use their notes to complete the assignment on history shorts that included a vocabulary section and crossword puzzle. If they did not finish in class, they were instructed to continue working on the history shorts for homework. The students were dismissed from class at the appropriate time and given a piece of candy as a reward for good behavior.

The data source used to answer Research Question 2 was transcripts from two classroom observations. The transcripts from the classroom observations were analyzed for Participant B's use of EBPs or instructional strategies as compared to the Consolidated EBPs and Instructional Strategies (see Table H3). In answering Research Question 2, Participant B was observed by the researcher during the first observation using: (a) direct instruction; (b) still pictures and character descriptions; and (c) questioning to help students develop higher level thinking skills.

During the second observation, Participant B was observed by the researcher using: (a) guided questioning and review; (b) advance organizer and partial notes; (c) PowerPoint presentation; (d) instructional and informational summaries; and (e) classwork and homework for ongoing assessment. Participant B was observed stating the following, which evidenced some of the EBPs or instructional strategies observed:

I don't know if my questioning techniques are evidence-based practices; I would like to think they are. I have a limited scope of what I can use with my students simply because they have limited abilities. I can't have a writing-driven format of instruction because my students are not good writers. And I can't have extensive reading sections because my kids are not good readers. I have a couple of decent readers and one exceptional reader, but other than that, they struggle to infer, or they struggle to comprehend everything that they've read. So everything comes in chunks. I have to use student strengths and weaknesses to drive my instruction. And the tests are that way, too. I always tell the students that I can make a difficult test but the purpose—the object of our lessons is for the students to

remember the material so that when the SOL comes around, they will do well. I would say I split my time between the SOL Extension Questions, the skeletal notes, the PowerPoint, history shorts, and summary. I reaffirmed but clarified the pyramid diagram of the power hierarchy in France on the whiteboard and reinterpreted it for the kids so they would better understand what was going on. I tried to reinforce what we had already learned, clarify what was coming in today's lesson, and prepare the students for what is coming next. I have to design my instruction to meet the students' needs and the SOL requirements.

Summary for Participant B research question 2. Research Question 2 focused on identifying what instructional strategies participants used during their instruction, with two classroom observations and postobservation interviews contributing to the findings. Participant B was the midcareer teacher who taught World History to 10th grade students with HID in the self-contained setting. He was proficient teaching the subject matter and incorporated several EBPs and instructional strategies into his teaching, including direct instruction, questioning and discussion, still pictures for visual display, PowerPoint presentations, partially completed notes, modified reading material, and homework assignments. His lesson plans were broad in scope yet contained the essence and sequence of his instruction.

Participant B described having clear objectives in mind when teaching and was proficient at including students in the discussion on ethical and moral dilemmas. He said he was familiar with EBPs but did not feel obligated to incorporate them into his teaching. Rather, he said he based his instruction on meeting students' needs and geared

his reading and writing assignments to students' ability levels. He utilized material designed to improve SOL scores and said that the push for improved test results frequently impacted his instruction.

Research question 3. Research Question 3 queried what internal and external factors influenced participants when determining the EBPs and instructional strategies they implemented in their instruction with students with HID in the self-contained setting. Data sources were examined and analyzed to identify any internal or external influences as compared to those identified by Boardman et al. (2005) (see Table 8).

Three data sources were used to answer RQ3: (a) postobservation interview; (b) final interview; and (c) Experience and Attitude Questionnaire (EAQ). The first data source was two postobservation interviews, analyzed for Participant B's stated internal and external influences when selecting EBPs and instructional strategies. In answering Research Question 3 during the first postobservation interview, Participant B stated he was influenced by student ability levels and class size. In answering Research Question 3 during the second postobservation interview, Participant B stated he was influenced by the structure of the unit and the need to create student understanding, as evidenced by the following comments:

One influence is that the point in the unit is so close to the beginning, we spent time to establish a knowledge base so we can continue expanding the knowledge base. And as far as the PowerPoint questions and the history short go, they reaffirmed what we've been learning. I need to ensure that they will have the base that they need from the start so that they can understand, explain, and identify the

components of the French Revolution. And overall, everything is driven by the SOL requirements and really, student needs and ability levels.

The second data source was the final interview, analyzed for in Participant B's stated internal and external influences when selecting EBPs and instructional strategies. In answering Research Question 3, Participant B stated that he was influenced by whether or not the students would enjoy it, whether they were capable of doing the work, and whether or not they would agree to do the work.

The third data source was results from the Experience and Attitude Questionnaire (EAQ), analyzed for Participant B's stated internal and external influences when selecting EBPs and instructional strategies. In answering RQ3, Participant B stated he was influenced by his own teaching experience, peers, the Internet, administrative requirements, standardized testing, and lack of time. In answering Research Question 3, Participant B responded to the interview questions as follows:

I have to design my instruction to meet the students' needs and the SOL requirements. Sounds kind of crazy, but I always think to myself, will the kids like this? Will it be something they can do, number one, and number two is, will they mind doing it. I've found through experience that if kids don't like doing something, they generally don't do that well. The minute they like something, or that you can make it intriguing enough for them, then they will excel!

Based on his responses to the EAQ seeking to identify how frequently participants used EBPs, Participant B stated that in general, he used EBPs consistently, approximately three or four days per week, with most classes with modifications.

Summary for Participant B research question 3. Research Question 3 was about what internal and external factors influenced participants when determining the instructional strategies or EBPs they implemented in their instruction with students with HID in the self-contained setting. Participant B was the midcareer teacher who taught World History to students with HID in the self-contained setting. He incorporated several EBPs and instructional strategies into his teaching, including check for understanding, direct instruction, direct questioning, comparing characters, ongoing assessment, teaching higher order thinking skills, identifying similarities and differences, guided questions using an advance organizer, and still pictures for nonlinguistic representation. Participant B stated that the internal or external factors that most influenced his selection of EBPs and instructional strategies were whether or not the students would like it, were able to do it, and would they mind doing it. He stated that SOL requirements also impacted his selection, as did curriculum content and students' ability levels in reading and writing.

Based on responses to the EAQ, Participant B indicated he was familiar with the advantages of using EBPs and generally relied on his teaching experience when determining which EBPs to use with students with HID. He did not use educational research at all but felt supported by school administration regarding his choices of instructional strategies. Participant B wrote a detailed response when provided with the opportunity to add additional comments in Section V of the EAQ. He stated that time constraints were problematic as were the high expectations from state-mandated testing that required students with identified disabilities to achieve to the same levels as their nondisabled peers. Participant B said that he was passionate about teaching but felt that

using EBPs would not remedy the numerous difficulties encountered when teaching students with disabilities.

Participant C

Research question 1. Research Question 1 was about what EBPs or instructional strategies special education teachers at the beginning, midcareer, and senior levels stated they used when teaching students with HID in the self-contained setting. Participant C was a 58-year-old male with 25 years' teaching experience. During this study, he taught Algebra I, Parts 1 and 2, to students with HID in the self-contained settings.

The first data source to answer Research Question 1 was two lesson plans. Participant C's lesson plans were analyzed to identify any EBPs or instructional strategies. Participant C included the following EBPs and instructional strategies in his first lesson plan: (a) work with a partner; (b) check for understanding; (c) higher level thinking; (d) homework review; and (e) quiz for ongoing assessment. In the second lesson plan, Participant C included the following EBPs and instructional strategies: (a) quiz; (b) note taking; (c) direct instruction; (d) Plug & Chug; (e) collaborative groups; (f) humor; (g) pacing guide; (h) rewards; (i) Trial & Error.

Participant C included EBPs and instructional strategies embedded in the description of instruction which provided guidelines and structure for the lessons. Two teacher-made forms were used for the lesson plans.

The second data source used to answer Research Question 1 was the preobservation interviews. These interviews were conducted prior to each classroom observation. A printed copy of the definitions of instructional strategies, EBPs, and

examples of each, as used in this study, were handed to Participant C prior to each interview (see Tables 5 and 6). On both occasions, he read and reviewed the definitions and examples, and when asked if he had any questions, he stated that he understood the definitions and he did not have any questions.

During the preobservation interviews, Participant C was queried about what EBPs or instructional strategies he would use during the instruction about to be observed. Dialogue from the preobservation interviews was transcribed, and those notes were analyzed for EBPs or instructional strategies. In answering Research Question 1, during the first preobservation interview, Participant C stated that he intended to use the following EBPs or instructional strategies: (a) work with a partner; (b) check for understanding; (c) higher level thinking; (d) homework review; and (e) quiz for ongoing assessment. In answering RQ1 during the second preobservation interview, Participant C stated that he intended to use the following EBPs or instructional strategies: (a) quiz; (b) note taking; (c) direct instruction; (d) Plug & Chug; (e) collaborative groups; (f) humor; (g) pacing guide; (h) rewards; and (i) Trial & Error.

The third data source for Research Question 1 was the postobservation interviews. The postobservation interview was held following each of the two classroom observations and provided an additional opportunity for Participant C to state or describe his use of EBPs or instructional strategies during the observed lesson. Participant C was asked to state what strategies he actually used during instruction. Responses were analyzed using Tables 5 and 6 and the Consolidated EBPs and Instructional Strategies Checklist (see Table H3) to identify any stated EBPs or instructional strategies.

In answering Research Question 1 during the first postobservation interview, Participant C stated that he used the following EBPs or instructional strategies: (a) work with a partner; (b) check for understanding; (c) higher level thinking; (d) homework review; and (e) quiz for ongoing assessment. Exemplars of Participant C's responses during the postobservation interviews included the following:

Last semester the kids pretested on this information; then they posttested on the same information. I use a lot of data to make sure that they understand and if they are having difficulty with certain concepts, we hit that again. We're doing a review for the SOL test because this class is a year-long class broken up into part one and part two. This semester is on new material so for the review today, we're going over new material as well as the material from last semester. And for a lot of my kids with disabilities, long-term retention is very difficult. That's why these reviews are critical.

In answering Research Question 1 during the second postobservation interview, Participant C stated he used all the strategies he had previously identified and those were: (a) quiz; (b) note taking; (c) direct instruction; (d) Plug & Chug; (e) collaborative groups; (f) humor; (g) pacing guide; (h) rewards; and (i) Trial & Error. Participant C described providing guiding questions as support for the students and indicated he would be using rewards and praise, as noted in the following comments:

Well, I reinforced their effort and provided recognition as we went over the homework. We use humor to encourage them! I used guiding questions and used higher level thinking questions. I take the material that they know and then I take

it to the next level but I don't explain it to them at first. I have them try to figure it out, based on the content knowledge—the knowledge they already have. I have them use Plug & Chug and let them work in collaborative groups. I have two groups—they get paired up and then the groups rotate based on their results. If I'm getting good results, I'll keep them together. If I'm not getting good results then I'll readjust.

The fourth data source that answered Research Question 1 was the final interview. The final interview was held following the second classroom observation. Participant C was queried about the instructional strategies he used most frequently in his classroom. Responses were analyzed for use of EBPs or instructional strategies. In answering Research Question 1, Participant C stated the EBPs and instructional strategies he used most frequently were: (a) direct instruction; (b) peer work; (c) study packets; (d) board work; (e) pretest-posttest; (f) reward program, and (g) Instructional Assistant.

Participant C described using direct instruction, peer mediation, study packets, board work, pretest-posttest, and rewards to support and encourage student engagement. He stated that he also monitored the students for understanding and frequently provided a visual display of math solutions so that students could see the progression of their work and help identify any errors. He remarked that tangible rewards were an important strategy to encourage and motivate students. He described using one strategy, “think, pair, share,” at the start of the lesson and emphasized the review and remedial nature of the lesson. He stated,

I review the previous lesson first before any new instruction. When I do the review, I make sure that I hit those areas even if the students don't ask questions.

They may ask questions in other areas, but I try to follow the data that I've used to create my lessons. The review is based on student needs and ability levels.

Participant C stated the EBPs or instructional strategies he used during instruction and they are summarized in Table 10.

Table 10

Participant C: Summary of Stated Evidence-Based Practices or Instructional Strategies for Research Question 1

Lesson Plan	Preobservation Interview	Postobservation Interview	Final Interview
Lesson Plan 1 <ul style="list-style-type: none"> • work with a partner • check for understanding • higher level thinking • homework review • quiz for ongoing assessment 	Interview 1 <ul style="list-style-type: none"> • work with a partner • check for understanding • higher level thinking • homework review • quiz for ongoing assessment 	Interview 1 <ul style="list-style-type: none"> • work with a partner • check for understanding • higher level thinking • homework review • quiz for ongoing assessment 	<ul style="list-style-type: none"> • direct instruction • peer work • study packets • board work • pretest/posttest • reward program • Instructional Assistant
Lesson Plan 2 <ul style="list-style-type: none"> • quiz • note taking • direct instruction • interactive questioning • Plug & Chug guidance (<i>try a solution and check it for accuracy</i>) • collaborative groups • humor • pacing guide • rewards • trial & error 	Interview 2 <ul style="list-style-type: none"> • quiz • note taking • direct instruction • interactive questioning • Plug & Chug guidance (<i>try a solution and check it for accuracy</i>) • collaborative groups • humor • pacing guide • rewards • trial & error 	Interview 2 <ul style="list-style-type: none"> • quiz • note taking • direct instruction • interactive questioning • Plug & Chug guidance (<i>try a solution and check it for accuracy</i>) • collaborative groups • humor • pacing guide • rewards • trial & error 	
	Changes/Adjustments <ul style="list-style-type: none"> • none 	Changes/Adjustments <ul style="list-style-type: none"> • reward program and Instructional Assistant 	

Summary of Participant C research question 1. The focus of Research

Question 1 was to identify the EBPs and instructional strategies participants stated they used when teaching students with HID in the self-contained setting (see Table 10).

Participant C was an experienced, senior teacher who had worked with students with

disabilities for over 25 years. He was aware of his students' abilities, disabilities, and instructional needs and based his instructional style and strategies on the needs of the students. He used lesson plans to guide his instruction and identified the EBPs and instructional strategies that he would implement. Participant C stated he was proud of his student rewards system and emphasized how important it was to student learning.

Research question 2. Research Question 2 queried what EBPs and instructional strategies were used by special education teachers at the beginning, midcareer, and senior levels when teaching students with HID in the self-contained setting. Results for the data source were analyzed to identify any EBPs or instructional strategies as compared to the Consolidated EBPs and Instructional Strategies (see Table H3).

Classroom observation 1. The first observation was Algebra I, Part 1 in the self-contained setting for students with HID and was a 90-minute session. Students were in the 9th and 10th grades. The observer was seated in the back with a panoramic vantage point. Participant C had stated during the first preobservation interview that he would be using five EBPs and instructional strategies, including work with a partner, check for understanding, higher level thinking, homework review, and quiz for ongoing assessment. Five students were enrolled in the class but only three were present, one male and two female students. One male was absent for the day and the other male student was testing in another location.

Participant C instructed the students to join him near his desk so that they could watch a YouTube video entitled "Best Motivational Speech Ever." He offered donuts to the students and the students seemed pleased to get this treat. Participant C praised and

rewarded the students for their cooperation and attention as evidenced in the following statements:

Let's go—where your heart is—where your work is! Life is what you make of it!

Turn your pain into greatness. How badly do you want something? Let's get ready for the daily quiz. Go back to your seats and take out your calculators, sharpen your pencils—we'll be doing a review of the previous lesson. Who did their studying last night?

The quizzes were distributed and the students spent 10 minutes quietly working on them. The students were then instructed to take out their work packet from the previous lesson to begin their review of previously learned information. Participant C continued guiding and questioning the students as follows:

Let's see if you have any questions from yesterday. Let's continue with the review. I know you all stayed after school yesterday to study. How long did you study last night? Remember the pretest you took back in August? Remember your study work and the review work we've been doing? Keep your focus—look at the quadratic formula—have you seen it before? When? Highlight and circle this information. You need to memorize it—put a star next to this—it will be on your quiz tomorrow.

Classroom observation 2. The second observation was Algebra I, Part 1 in the self-contained setting for students with HID and was a 90-minute session. Students were in the 9th and 10th grades. The observer was seated in the back with a panoramic vantage point. Participant C had stated during the second preobservation interview that he would

be using 10 EBPs and instructional strategies, including quiz, note taking, direct instruction, interactive questioning, Plug & Chug (try a solution and check it for accuracy), collaborative groups, humor, pacing guide, rewards, and trial and error. The observer was prepared with supplies to take longhand notes; no recordings were made in the presence of students. The observer took detailed notes describing the activities and dialogue that took place in the classroom.

The data source for Research Question 2 was two classroom observations which were analyzed for Participant C's use of EBPs or instructional strategies. During the first observation, Participant C was observed by the researcher using: (a) work with a partner; (b) check for understanding; (c) higher level thinking, (d) homework review; and (e) quiz for ongoing assessment.

Transcripts from the second classroom observation were analyzed for Participant C's use of EBPs or instructional strategies. In answering Research Question 2, Participant C was observed by the researcher using: (a) partner work; (b) check for understanding; (c) higher level thinking; (d) homework review; and (e) quiz for ongoing assessment. In answering Research Question 2, Participant B was observed stating the following.

Do you have yesterday's work packet? Sit next to another student to get caught up to where we are. Please help him and work together for about 10 minutes. My spirit will be sitting on your shoulder during the SOL test! Remember when you are studying tonight and have your examples, use them!

During the postobservation interview, Participant C was asked to recall what EBPs and instructional strategies he used during instruction and what may have been

added or deleted. Participant C recalled incorporating all the named strategies throughout his instruction and stated the following:

Everything that you just said, we did. And with the students, we injected humor into the class, and prior knowledge. But using humor with my students helps them feel relaxed—so many of them have test anxieties and getting up in front of the room and showing their work and it's hard for them. And the jokes, they're never planned—they just happen and we go with them and it relaxes everyone. And the students are helping other students—there may be collaboration spontaneously but sometimes I'll just say to one person, hey, go help this other person—reach out to them—go help this person because they may be struggling, and the kids are very open to that. And it's just a very collegial class—very professional.

Participant C said he relied primarily on the needs of his students to determine his instructional strategies for this lesson.

Summary for Participant C research question 2. Research Question 2 focused on identifying what instructional strategies participants used during their instruction, with two classroom observations and postobservation interviews contributing to the findings. Participant C was the senior teacher who taught Algebra I to 9th and 10th grade students with HID in the self-contained setting. His lesson plans varied in that they were written using different formats; the first plan described his instruction in broad terms while the second contained more detail. He was proficient teaching the subject matter and creative in his use of instructional strategies designed to meet his students' needs. He used daily assessment, direct instruction, questioning, rewards and praise, written work packets for

class and homework, partially completed notes, modified reading material, collaborative and interactive learning, and the use of an Instructional Assistant. He used an easy going approach with the students while still commanding their respect. He incorporated inspiration and motivation into his lessons and believed in rewarding students for their cooperation and attention with tangible rewards.

Participant C stated he used student pretest-posttest data to drive his individualized instruction in order to achieve student success and passing SOL scores. Participant C was unable to clearly describe his understanding and use of EBPs but said that using EBPs was not a primary focus of his teaching. He cited his 25 years of teaching experience and collaborative relationships with colleagues as his sources of instructional strategies.

Research question 3. Research Question 3 queried what internal and external factors influenced participants when determining the instructional strategies or EBPs they implemented in their instruction with students with HID in the self-contained setting. Data sources were examined and analyzed to identify any internal or external influences as compared to those identified by Boardman et al. (2005) (see Table 8). Three data sources were used to answer Research Question 3: (a) postobservation interview; (b) final interview; and (c) Experience and Attitude Questionnaire (EAQ). Participant C described his students' needs as the greatest influence on his selection of instructional strategies.

The needs of my students are the greatest influence. I had all these students last year in pre-algebra so I know their strengths and weaknesses and I know what makes them tick – what makes them smile and what makes them happy and by

knowing all that, I plan my lesson because each student can do what I know they can do and so it's all based on student needs.

The second data source was the final interview, analyzed for Participant C's stated internal and external influences when selecting EBPs and instructional strategies. In answering Research Question 3, Participant C stated that he was influenced by best practices, student test data, and what other school districts were using and considered these the most significant influences on his selection of instructional strategies. He went on to state that these factors influenced him more than using educational research as follows:

I tend to like looking at what other schools are using more than looking at research-based practices because research-based [practices] use a select group...but when I see another district with the same demographics, types of students, the same special needs, when they are successful with high test scores, high graduation rates, students going to college, I take that information, implement it, bend it, tweak it to help my students because it's a proven.

During the final interview, Participant C continued to elaborate about what influenced his selection and use of EBPs as follows:

I observe other classes, other teachers teaching Algebra I. I look at their success rate with students, I look at their standardized test scores, I look at their grades across the board and I share ideas, I ask questions and I take on what I've seen as successful from them; I incorporate that to meet the needs of my students and I adapt that information to get the most success out of my students. And with the

students, we inject humor into the class, and prior knowledge. Using humor with my students helps them feel relaxed. And the students are helping other students—there may be collaboration spontaneously but sometimes I'll just say to one person, hey, go help this other person—reach out to them—go help this person. The curriculum guide is provided by the Department of Education and our school has expectations for success rates on the SOL tests. We're observed on a weekly basis by the assistant principal affiliated with Special Education and I appreciate his comments and feedback. The needs of my students are the greatest influence. I know their strengths and weaknesses. I plan my lesson because each student can do what I know they can do and so it's all based on student needs. I'm not a big fan of research. I'm more of a hands-on guy. I look at what other successful schools use with students—it's whole student bodies—we have the good, the bad, and the ugly [based on student needs], and that's what I like to drive my instruction—using that data because I find it's not skewed and it covers a whole population of a whole school and that's what I have to do with the whole population of a whole school—that's what I feel is my driving force.

The third data source was the Experience and Attitude Questionnaire (EAQ).

Participant C's responses were analyzed for stated internal and external influences when selecting EBPs and instructional strategies. In answering Research Question 3, Participant C indicated that he was influenced by his own teaching experience, peers, other experts, and professional development. Based on his responses to the EAQ seeking to identify how frequently participants used EBPs, Participant C indicated that in general,

he used EBPs consistently, approximately three or four days per week, with most classes with modifications.

Summary for Participant C research question 3. Research Question 3 was about what internal and external factors influenced participants when determining the instructional strategies or EBPs they implemented in their instruction with students with HID in the self-contained setting. Participant C was the senior teacher who taught Algebra I to students with HID in the self-contained setting. He incorporated several instructional strategies into his teaching, including quiz, note taking, direct instruction, interactive questioning, Plug & Chug (try a solution and check it for accuracy), collaborative groups, humor, pacing guide, rewards, and trial and error.

The internal or external factors that most significantly influenced his selection of EBPs and instructional strategies were best practices, student test result data, and what other school districts were using. Participant C stated that these factors influenced him more than using educational research. Participant C stated that he was not a big fan of educational research and viewed it as unrealistic for application to real-life educational situations with students with disabilities. He said he much preferred identifying successful school districts and emulating their instructional practices. Participant C's responses to the EAQ query were somewhat inconsistent with the statements made during his interviews and those discrepancies will be addressed in the next chapter.

Comparisons Across Cases

Comparisons between and among participants examined the use of EBPs and instructional strategies by beginning, mid-career, and senior teachers. The data sources

that provided responses to Research Questions included lesson plans, interviews, classroom observations, and EAQ results.

Lesson plans. The lesson plans were selected as a data source to answer Research Question 1, about what EBPs or instructional strategies special education teachers at the beginning, midcareer, and senior levels stated they used when teaching students with HID in the self-contained setting. Participant A, the beginning teacher, did not include any EBPs or instructional strategies in her lesson plans. In contrast, Participant B, the mid-career teacher, included five EBPs and five additional instructional strategies in his first lesson plan. In his second lesson plan, Participant B included three EBPs and two additional instructional strategies. Participant C, the senior teacher, included two EBPs and four additional instructional strategies in his first lesson plan. In his second lesson plan, Participant C included five EBPs and three additional instructional strategies. Participants B and C were similar in their use of the following EBPs and instructional strategies: (a) check for understanding, (b) direct instruction, (c) teaching higher-level thinking skills, (d) guided and interactive questioning, and (e) homework review (see Table 11).

Table 11

Participants A, B, and C: Summary of Evidence-Based Practices or Instructional Strategies Stated in Lesson Plans

Participant A	Participant B	Participant C
Lesson Plan 1 No EBPs or instructional strategies identified	Lesson Plan 1 <ul style="list-style-type: none"> • check for understanding^a • direct instruction^a • direct questioning^a • comparing characters • ongoing assessment • teaching higher order-thinking skills^a • identifying similarities and differences • guided questions^a • using an advance organizer • still pictures for nonlinguistic representation 	Lesson Plan 1 <ul style="list-style-type: none"> • work with a partner • check for understanding^a • higher level thinking^a • homework review^a • quiz for ongoing assessment
Lesson Plan 2 No EBPs or instructional strategies identified	Lesson Plan 2 <ul style="list-style-type: none"> • guided questioning and review^a • advance organizer and partial notes^a • PowerPoint presentation • instructional and informational summaries • classwork and homework for ongoing assessment^a 	Lesson Plan 2 <ul style="list-style-type: none"> • quiz • note taking^a • direct instruction^a • interactive questioning^a • Plug & Chug guidance (<i>try a solution and check it for accuracy</i>) • collaborative groups • humor • pacing guide • rewards • trial & error

^aAn identical or similar evidence-based practice (EBP) or instructional strategy used for more than one participant.

Classroom observations. Classroom observations were selected as a data source to answer Research Question 2 about what EBPs and instructional strategies were used by special education teachers at the beginning, midcareer, and senior levels when teaching students with HID in the self-contained setting. All participants were observed using EBPs and instructional strategies during classroom observations. Participant A used three EBPs and two instructional strategies during her first observed lesson. Participant B use five EBPs and three instructional strategies during his first observed lesson. Participant C used five EBPs and two instructional strategies during his first observed lesson. Participants B and C each used five EBPs during instruction compared to the two EBPs used by Participant A during the first observation.

During the second observed lesson, Participant A used two EBPs and six instructional strategies. Participant B used three EBPs and two instructional strategies. Participant C used five EBPs and three instructional strategies. Participant C used five EBPs compared to the two EBPs used by Participant A and the three EBPs used by Participant B. Participants A and B were observed using advance organizers and PowerPoint presentations. Participants A and C both used cooperative learning, quiz, and rewards and praise. Participants B and C used check for understanding, direct and interactive questioning, teaching higher level thinking skills, and classwork and homework. Participant A was observed using behavior management, and she stated that she relied on classroom management and behavior interventions throughout her instruction. Participant C was observed using rewards, praise, and encouragement throughout his instruction, and gave treats at three stages of his instruction to students

who completed assigned seat work, assisted another student, or successfully answered specific questions. Participant B used identifying similarities and differences, comparing characters, ongoing assessment, and still pictures for nonlinguistic representation during the first classroom observation (see Table 12).

Table 12

Participants A, B, and C: Comparison of Evidence-Based Practices or Instructional Strategies Observed During Classroom Observations

Participant A	Participant B	Participant C
Classroom Observation 1 <ul style="list-style-type: none"> • advance organizer^a • summarizing and note taking^a • cooperative learning^a • rewards and praise^a • instructional assistant^a 	Classroom Observation 1 <ul style="list-style-type: none"> • check for understanding^a • direct instruction^a • direct questioning^a • comparing characters • ongoing assessment • teaching higher-order thinking skills^a • identifying similarities and differences • guided questions using an advance organizer • still pictures for nonlinguistic representation^a 	Classroom Observation 1 <ul style="list-style-type: none"> • cooperative learning (<i>work with a partner</i>)^a • check for understanding^a • higher-level thinking^a • homework review^a • quiz for ongoing assessment^a • instructional assistant^a
Classroom Observation 2 <ul style="list-style-type: none"> • advance organizer^a • technology^a • PowerPoint^a • quiz^a • group reading and sharing • cooperative learning • behavior modification^a • rewards and praise^a 	Classroom Observation 2 <ul style="list-style-type: none"> • guided questioning and review^a • advance organizer and partial notes^a • PowerPoint presentation^a • instructional and informational summaries • classwork and homework for ongoing assessment^a 	Classroom Observation 2 <ul style="list-style-type: none"> • quiz^a • note taking^a • direct instruction^a • interactive questioning^a • Plug & Chug guidance (<i>try a solution and check it for accuracy</i>) • collaborative groups^a • humor • pacing guide • rewards^a • trial & error
Changes/Adjustments <ul style="list-style-type: none"> • behavior management • time adjustments^a 	Changes/Adjustments <ul style="list-style-type: none"> • time adjustments^a • SOL extension questions 	Changes/Adjustments <ul style="list-style-type: none"> • none

^aAn identical or similar evidence-based practice (EBP) or instructional strategy observed for more than one participant.

Experience and Attitude Questionnaire (EAQ). Following the postobservation interviews, participants were asked to complete the EAQ, a five-section, 30-item questionnaire designed to investigate participants' experiences, attitudes, and use of EBPs. The EAQ was designed to answer Research Question 3, what internal and external factors influenced participants when determining the instructional strategies or EBPs they implemented in their instruction with students with HID in the self-contained setting.

When responding to statements in the first three sections, participants used Likert scale ranges: (1) Strongly Agree, (2) Agree, (3) Disagree, (4) Strongly Disagree, (5) Unfamiliar to me. Participants were asked to respond to one statement in section four, addressing how frequently they used EBPs. In section five, participants were asked to add any comments. Responses for each EAQ section were consolidated for participants. Results were reported in subsequent tables.

Section I experience and attitudes, and use of evidence-based practices.

Participants were asked to select the best response to ten questions using Likert scale ranges: (1) Strongly Agree, (2) Agree, (3) Disagree, (4) Strongly Disagree, (5) Unfamiliar to me. The directions for this section were: "In the last six months, I have used the following sources of information when determining which evidence-based practices to use with students with disabilities. Please select the best response."

Participants A and B agreed with statement 1 that they relied on their own experience during the last six months when selecting instructional strategies and Participant C strongly agreed that he relied on his own experiences. In response to statement 2, Participants A and B agreed that they relied on the opinions of colleagues

while Participant C indicated that he strongly relied on the opinions of colleagues. Statement 3 required participants to consider if they consulted with experts when selection EBPs. Participant B disagreed about using their services, Participant A agreed, while Participant C indicated he strongly relied on expert consultation during the last six months. Participants A and B agreed when responding to statement 4, “Employer sponsored professional development,” indicating they relied on employer sponsored professional development within the past six months to influence the EBPs they use with students with disabilities. Participant C strongly agreed that he relied on employer sponsored professional development.

For statement 5, Participants B disagreed that he had relied on university courses during the past six months when determining which EBPs to use with students with disabilities, while Participants A and C agreed with this statement. Participants A and C agreed with statement 6, indicating they had used educational textbooks during the past six months while Participant B disagreed that he had used educational textbooks when determining which EBPs he would use with students with disabilities.

Participant B disagreed with statement 7 about having used video or audiotapes of EBPs, Participant A agreed, and Participant C strongly agreed. When considering statement 8 about having used internet resources, Participants A and B agreed that they had used internet resources in the last six months when selecting EBPs, and Participant C strongly agreed that he had used internet resources within the last six months. Participants A and B disagreed with the statement 9 that they had used practitioner articles from

professional journals, while Participant C strongly agreed with having used practitioner articles from professional journals.

In responding to statement 10 which included six sub-statements, Participants A and B disagreed with all six statements regarding the use of specific types of professional journal articles or original research articles from professional journals, indicating that they had not read any of these types of research. Participant C agreed that he had used meta-analysis of randomized, controlled studies, results from a controlled study without randomization, results from a quasi-experimental design, results from a single subject design study, and case studies. Participants' familiarity with these types of research was not previously established. It is unclear, therefore, if the participants understood or were familiar with any of these types of research articles they were asked to identify as having read and is best to consider these responses with caution.

Summary section I experience, attitudes, and use of evidence-based practices.

Participant C indicated that he had utilized university courses, educational textbooks, and a variety of research articles during the last six months when determining which EBPs to use with students with disabilities. Participant A and Participant C agreed that they relied on their personal experiences when selecting strategies. Participants A and B agreed when responding to the use of outside influences such as professional development and other sources such as internet resources, but disagreed when considering having used practitioner or professional journal articles (see Figure 4). It is unclear whether or not participants understood the types of research articles noted in statement 10, to which they

were asked to respond having read. Therefore, the results to this question should be considered with caution.

I. Experience, Attitudes, and Use of Evidence-Based Practices

“In the last 6 months, I have used the following sources of information when determining which evidence-based practices to use with students with disabilities.”

Please select the best response.

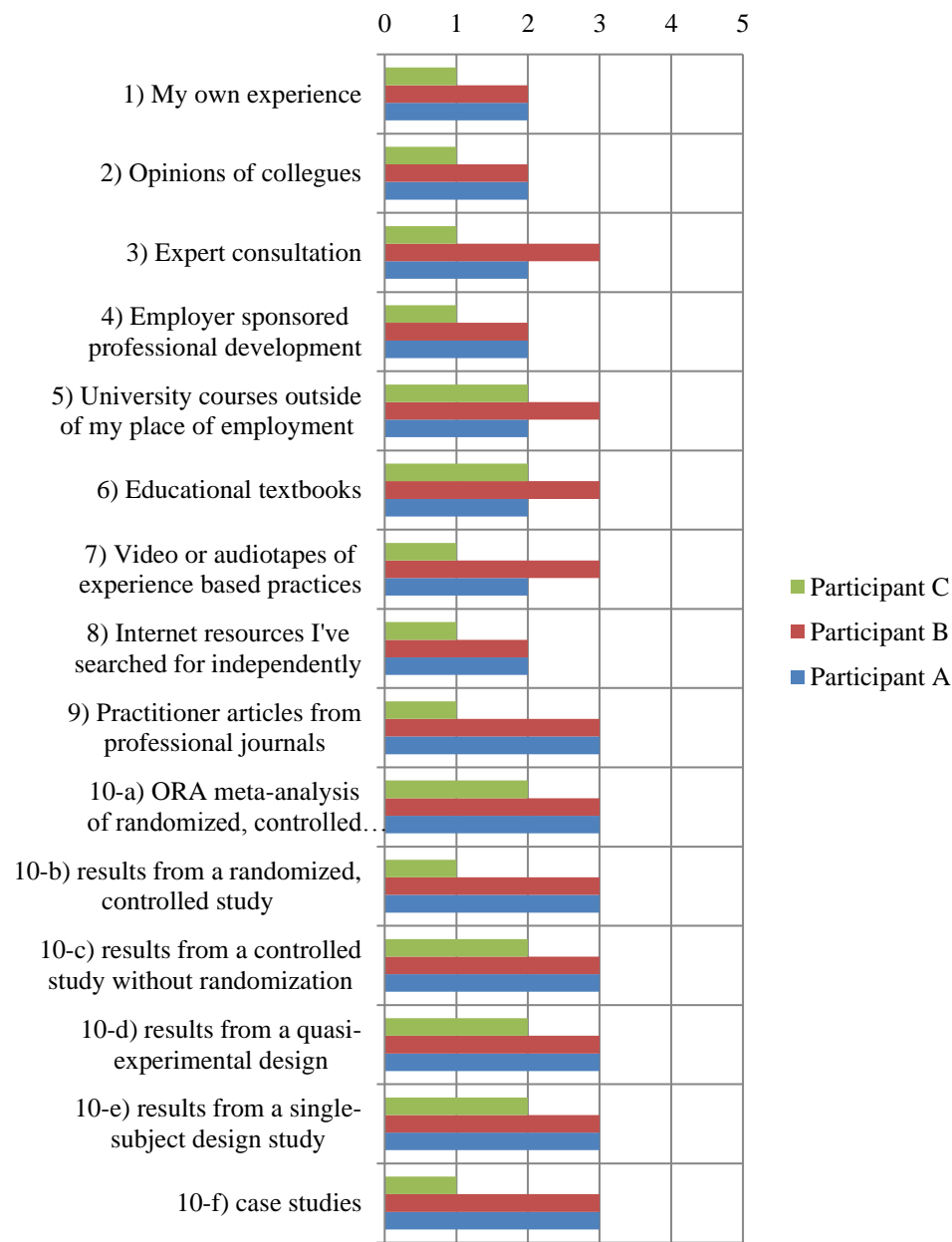


Figure 4. Section I - Experience, Attitudes, and Use of Evidence-Based Practices Questionnaire.

Section II evidence-based practices. In section II Evidence-Based Practices, participants were asked to select the best response to nine questions using Likert scale ranges: (1) Strongly Agree, (2) Agree, (3) Disagree, (4) Strongly Disagree, (5) Unfamiliar to me.

In response to statement 11 about having sufficient professional time to implement all instructional strategies they would like to use, both Participants A and B disagreed, and participant C strongly disagreed. Participant B agreed that he had administrative support to implement the strategies he selected while Participants A and C strongly agreed to this statement. Responding to statement 12, Participants A and B agreed that EBPs should be considered when making instructional decisions for students with HID and that specific strategies should be used based on specific student needs. Participant C strongly agreed with this statement. In response to statement 13, Participants A and B agreed that EBPs improved academic outcomes for students with disabilities and Participant C strongly agreed with this statement.

Statement 14 was if specific EBPs should be considered when making instructional decisions for students with disabilities. Participants A and B agreed with this statement while Participant C strongly agreed. Statement 15 was if EBPs improve academic outcomes for students with disabilities. Participants A and B agreed with this statement and Participant C strongly agreed. Participants C agreed with statement 16 that EBPs should be selected based on research and scientific studies that assess the usefulness of treatments or protocols. Participant B, however, strongly disagreed with this

statement and Participant A disagreed that EBPs should be based on research and scientific studies.

Statement 17 was, “EBPs are impractical for everyday work with students with disabilities.” Participants A and B disagreed while Participant C agreed with the statement.

When considering statement 18 about if they have sufficient resources to implement EBPs, Participant A agreed that she had sufficient resources to implement EBP and Participants B and C disagreed. Statement 19, the final statement in section II, was that sufficient research was available to support their use of EBP in their particular area of interest. Participants A and C agreed while Participant B disagreed with this statement.

Summary section II evidence-based practices. Participants A and B agreed that they did not have enough time to implement EBPs, and Participant C strongly disagreed with that statement. All participants indicated that they had administrative support for their use of EBPs. Participants B and C disagreed with statement 18, indicating that they did not have sufficient resources to implement EBPs. Participant A agreed that she did have sufficient resources to implement EBPs.

Participant C agreed that EBPs improve student academic outcome, should influence selection of instructional strategies, and were effective for students with HID. Participant B strongly disagreed with statement 16, that EBPs should be based on research and scientific studies that assess the usefulness of treatments or protocols.

Participant C strongly agreed with statement 16. Participants B and C indicated they had neither the time nor resources to fully implement EBPs (see Figure 5).

II. Evidence-Based Practices

Please respond to the following statements.

1-Strongly Agree 2-Agree 3-Disagree 4-Strongly Disagree 5-Unfamiliar to me

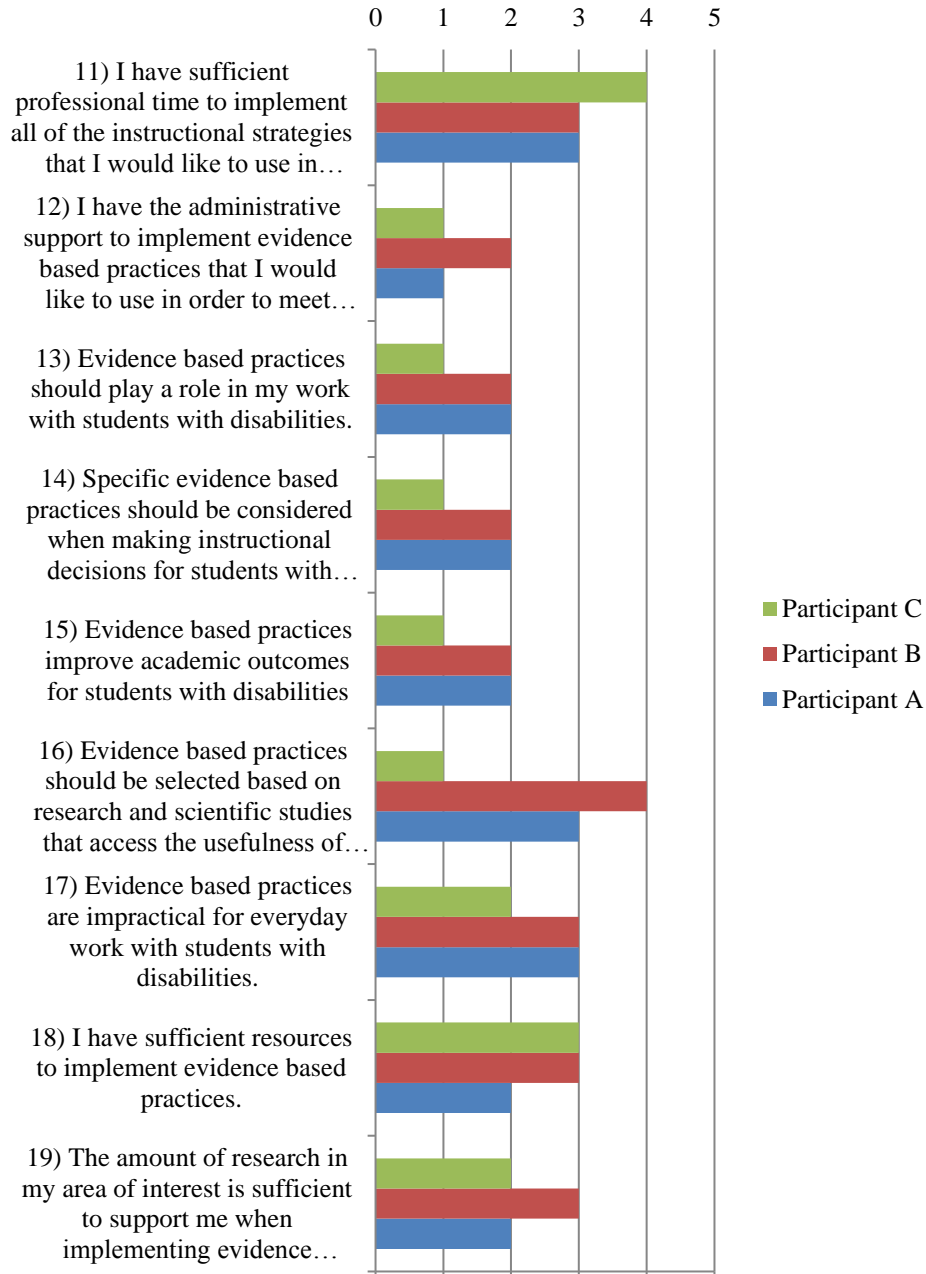


Figure 5. Section II - Experience, Attitudes, and Use of Evidence-Based Practices Questionnaire.

Section III implementing evidence-based practices. In section III, Implementing Evidence-Based Practices, participants selected the best response to ten questions using Likert scale ranges: (1) Strongly Agree, (2) Agree, (3) Disagree, (4) Strongly Disagree, (5) Unfamiliar to me.

Participants A, B, and C agreed with statement 20, “Employer provided professional development facilitates the use of EBPs.” When asked to respond to statement 21, I am able to define what it means to use research-based instructional strategies, Participants A and B agreed that they were able to define what was meant and Participant C strongly agreed that he was able to define what it meant to use research-based instructional strategies. All participants indicated that they were able to define what it meant to use research-based instructional strategies; however, it is unclear if their responses were accurate as no demonstrable evidence was requested of them and no further evidence was provided to confirm that they understood what it meant to implement EBPs.

The beginning teacher, Participant A, agreed with statement 22 that her teacher preparation program prepared her to incorporate EBPs into her daily instruction with students with HID, while the mid-career and senior teachers, Participants B and C, strongly disagreed. When responding to statement 23, “I access professional journals and research through personal subscription, colleague sharing, or employer provided subscriptions,” Participant A disagreed. Participant C agreed that he did access research through the sources indicated. Participant B strongly disagreed with the statement about accessing professional journals and research. All participants strongly disagreed with

statement 24, “I believe parents should have a say in determining which instructional strategies are used with students.”

Participant B disagreed with statement 25, “Evidence-based practices based on research are generally effective when I use them with my students.” Participants A and C agreed that using EBP with students was effective. Participants A and C disagreed with statement 26, “Evidence based practices should be incorporated into IEPs” and Participant B strongly disagreed. Participant B agreed with statements 27 and 28, “I feel confident in my ability to read and understand the research literature,” and “I feel confident in my ability to apply research to my work with students.” Participant C strongly agreed with those two statements, while Participant A disagreed with those statements.

Participants B disagreed with statement 29, that keeping current with the research literature in special education was a lifelong professional responsibility. Participant C strongly agreed with the statement about keeping current with research literature, while Participant A agreed.

Summary section III implementing evidence-based practices. All participants indicated that they were able to define what it meant to use EBPs. No demonstrable evidence was requested of the participants to demonstrate their understanding. Participant C was the only teacher who responded that he accessed several types of educational research.

No one favored parental involvement in the selection of instructional strategies and no one favored writing instructional strategies into student IEPs. Participants A and C

agreed that keeping current with research literature in special education was a lifelong responsibility. Participant B disagreed that he had an obligation to keep current with educational research (see Figure 6).

III. Implementing Evidence-Based Practices

Please respond to the following statements.

1-Strongly Agree 2-Agree 3-Disagree 4-Strongly Disagree 5-Unfamiliar to me

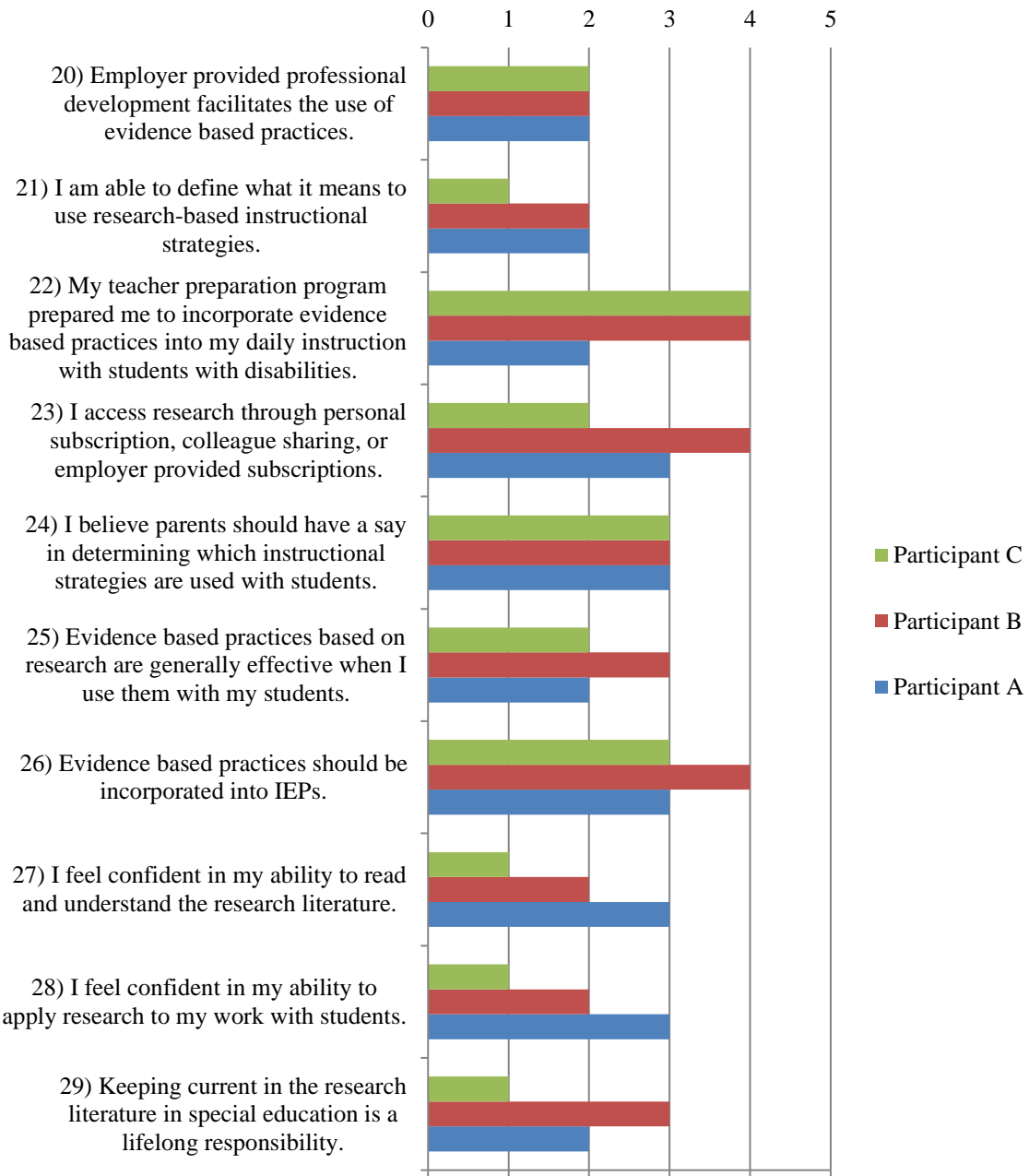


Figure 6. Section III - Experience, Attitudes, and Use of Evidence-Based Practices Questionnaire.

Section IV evidence-based practices. In section IV of the EAQ, Evidence-Based Practices, participants were asked to respond to one statement, “Rate your overall use of evidence-based practices.” Response options to statement 30 included: (1) Daily use w/all classes, (2) Consistent use (3-4 days per week) w/most classes, (3) Consistent use (3-4 days per week) w/most classes w/modifications, (4) Occasional use (2-3 days per week) w/some classes, (5) Rarely use (0-1 days per week), and (6) Never use. Participants B and C selected response 3, “Consistent use (3-4 days per week) w/most classes w/modifications.” Participant A selected response 4, “Occasional use (2-3 days per week) w/some classes.”

Summary section IV evidence-based practices. Participants B and C selected the response, “Consistent use on 3 - 4 days per week with most classes with modifications,” while Participant A selected “Occasional use on 2 – 3 days per week with some classes.” These responses indicated that two the participants with 15 – 25 years teaching experience believed they used EBPs in their work with students with HID but did not always implement these strategies with fidelity or consistency. Participant A used EBPs in her work with students with HID to a lesser degree. No demonstrable evidence was requested of the participants to confirm their responses (see Figure 7).

IV. Evidence-Based Practices

Please respond to the following statement.

1-Daily use w/all classes 2-Consistent use (3-4 days per week) w/most classes
3-Consistent use (3-4 days per week) w/most classes w/modifications
4-Occasional use (2-3 days per week)

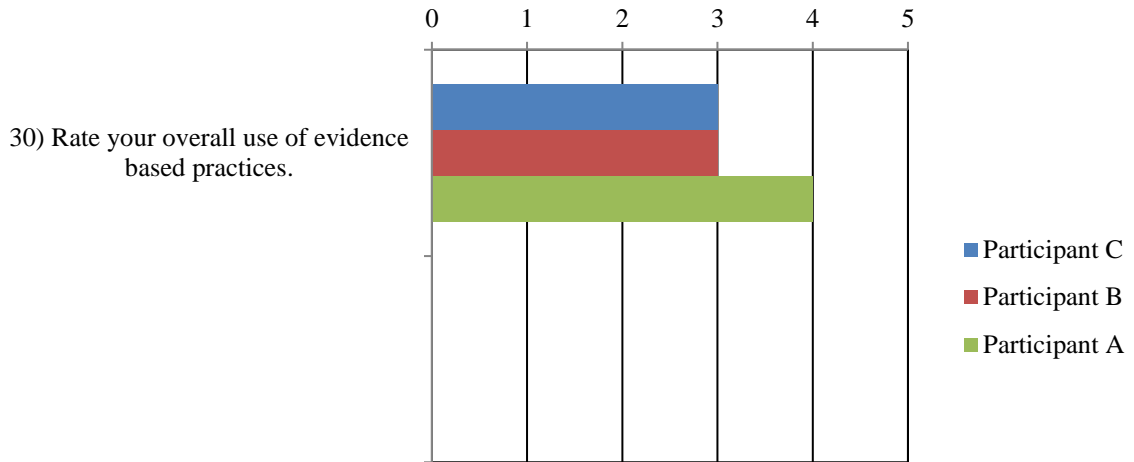


Figure 7. Section IV - Experience, Attitudes, and Use of Evidence-Based Practices Questionnaire.

Section V evidence-based practices comments. In section V of the EAQ, Evidence-Based Practices, participants were asked to add any other comments in the space provided. Participant A did not write any comments. Participants B and C provided additional insights into their use of EBPs.

Participant A: No comments were provided for section V.

Participant B noted that

All questions were answered in my role as a special education teacher within the self-contained setting. So, I felt some clarification may be necessary. It should be noted that the lack of time to implement consistent strategies is directly linked to

the amount of material/content that must be covered in any given class. While I agree that a broad range of strategies should be incorporated into daily lessons, the consistent use of those strategies requires time to plan, especially with colleagues covering the same content. This remains a problematic issue because schedules often do not allow for this. The very idea that EBPs should be selected based on research and scientific studies that assess their usefulness, is an interesting concept. If I were to apply the construction of an IEP using this logic, the documentation process would be so labor intensive that it would become counter-productive and content delivery would suffer. The notion that research-based strategies could be applied to individualized education is a great idea! However, under the current state-mandated testing structure, ALL students are expected to meet the SAME standards. To think that a self-contained student, with identified disabilities and deficits, who is clearly below the level of their regular-education peers, is expected to reach the same goal boggles my mind! And, in my professional opinion, the employment of research-based strategies will not remedy this situation.

Participant C stated, “At my school, I have the liberty to teach my lessons as I see the need to accommodate my students and adapt my lessons to help foster student achievement.”

Summary section V evidence-based practices comments. Participant A did not provide additional comments. Participants B indicated that he did not plan to, nor would

he use, research to guide his instruction. Participant C simply indicated that he was able to select the strategies he used during instruction.

Theoretical themes. Rosenbaum (2002) noted that descriptive case study research may be enriched by following a design blueprint in order to focus on the data collected and the ways in which the data were analyzed. By developing theoretical themes as part of the design, the current study consisted of interviews, observations, and a questionnaire. Based on related literature and previous research results, theoretical themes were developed to guide the development and end analysis of this descriptive case study. The theoretical themes that guided this study follow, along with the results for each. The lesson plans, interviews, classroom observations, and EAQ provided the data to support the results.

The first theoretical theme was teachers with the most experience would be least likely affected by external factors such as supervisors, administrators, educational research, and parents when selecting instructional strategies (Boardman et al., 2005; Sencibaugh, 2007). This theoretical theme proved correct. Participant A, the beginning teacher in the current study, was impacted by administration support and input. She was observed weekly and stated that she respected the administrator's comments and input to help her hone her instructional practice. Participants B and C were not affected by supervisors, administrators, or parents, and they did not feel bound by educational research.

All participants indicated that they believed they had administrative support regarding how they taught their classes and how they selected the instructional strategies

they use. No one experienced any significant influence or interference in how they taught their classes. No one was required to teach using specific programs or methods but all indicated that time was a major factor in limiting the types and quantities of instructional strategies used. The senior teacher respected administration and consulted with the principal occasionally, but was not required to adjust his instructional methods in any way.

Participants indicated that while they frequently had email and phone contact with parents and appreciated their involvement in the educational process, parental input was not solicited regarding how students should be taught. Educational research was not used to any great degree by the participants. Time constraints and trust in the value of EBPs greatly impacted the selection of instructional practices.

Participant C was most familiar with research as he had completed his Ed.D. in educational leadership approximately one year prior to the current study. He indicated, however, that educational research yielded strategies that were effective in isolated, controlled situations and would not be appropriate for use in authentic instructional situations. Participant B indicated that research-based practices would not be appropriate to use with students with significant disabilities and needs. Participant A indicated that she had never used research to guide her instructional practices, although she recognized the potential value.

The second theoretical theme was teachers with the least experience would be greatly influenced by administrative directives and parental requests when selecting EBPs (Boardman et al., 2005). This proposition proved to be partially correct. Participant A

received weekly observations and input from the special education administrator. She said she appreciated his suggestions and input. Participant B was not influenced by administration, except regarding the expectation of high standardized testing results. He independently determined how to teach his students. The senior teacher had great support from his school administrators, but they placed no requirements on his teaching techniques and had no influence in determining instructional strategies.

The third theoretical theme was experienced teachers would more likely use instructional strategies based on personal experience and peer idea sharing compared to teachers with less experience (Gaughan 2008; Maccini & Gagnon, 2006). This proposition proved partly correct. Participant A, the beginning teacher, relied on her colleagues to guide how she taught her classes. She also stated that although she was in her first year of teaching, she was confident in her teaching skills based on student teaching experiences.

Participants B and C relied on their previous teaching and personal experiences. Participant B indicated that there was not enough time to share teaching ideas, strategies, and material with peers. Participant C indicated that he based his instruction on his 25 years of teaching experience and that he often observed general education teachers in their classes to get new ideas about how to teach students with HID. He and his peers frequently shared lunch and discussed ideas about teaching specific topics. The fourth theoretical theme was experienced teachers would be least likely to use educational research to guide their instructional strategies (Burns & Ysseldyke, 2009; Gagnon & Maccini, 2007; Morgan et al., 2010).

This proposition proved incorrect due to the fact that the most experienced teacher, Participant C, recently completed a doctorate level degree and was exposed to current research. He indicated that he used research occasionally and acknowledged the intrinsic value. He did not respect research, however, for influencing his selection of instructional strategies because he believed it did not apply to the students with whom he worked. The beginning teacher and midcareer teacher had neither the time nor inclination to use research. Participant B expressed sincere frustration at paperwork requirements and other obligations and did not feel that identifying new educational research was realistic for teaching practices. He believed that practices identified through research were not appropriate for use with students with disabilities.

Summary

This chapter presented the results of a multiple-case study designed to identify what instructional strategies the participants stated they used, observe if they actually used them in their classes, identify what influenced their selection of instructional strategies, and identify the knowledge participants had about and attitudes towards EBPs. Three special educators at the beginning, midcareer, and senior levels of teaching experience participated in this study.

Results suggested that participants selected instructional strategies based on student needs and ability levels, personal experience, and as preparation for standardized testing. Participants used EBPs during their instruction, but were generally unaware that they were evidence-based practices. One participant indicated that he used educational research to influence his use of EBPs when teaching students with HID in the self-

contained setting. The next chapter will present a discussion of the results as summarized in this chapter as well as limitations and suggestions for further research in special education and instructional strategies.

Chapter 5: Discussion

This chapter presents a discussion of the major findings of a multi-case study about the selection and use of evidence-based practices (EBPs) by teachers at the secondary level and their implications for both researchers and practitioners. First, the Participants and their teaching situations are described and the findings are summarized related to each Research Question (RQ). Next, the discussion of results will refer to the theoretical themes that guided this study. Researcher impressions, implications for consumers, teacher education programs, and policy-makers are next. Limitations and recommendations for future research are also addressed in the chapter.

Participants

Participant A. Participant A was the first year teacher, teaching English 9 to students with HID in the self-contained setting. During both observations, she worked with the same group of eight students. The beginning teacher relied on peers and other professionals to guide her instruction and supply instructional materials. She used EBPs and instructional strategies during her instruction. Administrative support was provided during weekly observations and Participant A said that she received encouragement and validation that her instruction was appropriate and effective. She indicated through EAQ responses that she did not use educational research and it was not important if the strategies she used were EBPs.

Participant B. Participant B was the midcareer teacher, teaching World History II to students with HID in the self-contained setting. He was observed in different classes, one with three students and one with eight students. He was able to redirect students to stay focused on their work and was able to diffuse any student behavior issues before they became problematic. He was knowledgeable about his students' disabilities and instructional needs. He used detailed lesson plans to guide his instruction and identified the EBPs and instructional strategies that he would implement. He used EBPs and instructional strategies during his instruction. He stated that student needs and standardized testing primarily drove his instruction.

Participant C. Participant C was the senior teacher, teaching Algebra I to students with HID in the self-contained setting. He stated that he relied primarily on the needs of his students to determine his instructional strategies for his lessons and used data from pretest-posttest to drive his instruction. He was at ease when working with the students, injected humor into his instruction, and rewarded students with consumable treats. The students responded by complying with directions and maintaining their focus. Participant C used specific instructional strategies with his students, designed with students' needs in mind. He stated that he did not seek to use EBPs during instruction, but rather, he sought to use appropriate instructional strategies that would help the students be academically successful.

The three levels of teachers had similarities in that they based their selection of EBPs and instructional strategies primarily on students' needs and ability levels. They were all attuned to their students' moods and attitudes and utilized behavior

modifications during their instruction. The teachers all made an effort to make their instruction enjoyable and were concerned about how their students would respond to their teaching styles and techniques. They had differences in how they prepared their lesson plans, developed their instructional styles, and in their experiences with using EBPs.

Summary of Findings

EBPs and instructional strategies. The primary data source that answered Research Question 2 was classroom observations as they provided the researcher the opportunity to identify if participants used the EBPs and instructional strategies they had previously identified. Combined with postobservation interviews, results about the use of EBPs and instructional strategies follow.

Prior to classroom observations, the participants were given the definitions of EBPs and instructional strategies along with examples of each. The participants stated during the preobservation interviews that they were able to define what it meant to use EBPs, and also indicated the same thing in response to statement 21 on the EAQ, which was, “I am able to define what it means to use research-based instructional strategies.” There was insufficient evidence, however, to determine if the participants understood the concept of incorporating EBPs into instruction. No demonstrable evidence was required of them and it is possible they did not fully understand the differences between EBPs and instructional strategies.

Participant A. Participant A did not identify EBPs or instructional strategies in her lesson plans. During the preobservation interviews, she was able to state the strategies she would be using during her instruction. She did use the EBPs and instructional

strategies she had preidentified as observed by the researcher during observations, and was able to describe their effectiveness. She used a combination of EBPs and instructional strategies. EBPs included: (a) advance organizer; (b) group reading and sharing; (c) cooperative learning; (d) kinesthetic (hands-on) learning and (e) summarizing and note taking. Instructional strategies included: (a) lecture and discussion (b) rewards and praise; (c) directed questions; (d) behavior modification; (e) PowerPoint; (f) and quiz for assessment.

At the recommendation of her educational peers, Participant A incorporated advance organizers and summarizing and notetaking into her instruction. Scruggs et al. (2010) identified using study aids, graphic organizers, and classroom learning strategies as being somewhat effective in helping students organize educational materials. Swanson and Hoskyn (2001) identified effective instructional strategies for secondary students with learning disabilities and noted that organization and explicit practice contributed the greatest proportion of positive outcomes for students, providing the opportunity to scaffold new information and relate it to previously learned information, thereby increasing the likelihood of retention. Participant A did not independently select the instructional strategies she used, but rather, selected them at the advice of her educational peers. The strategies she used during her instruction, however, were EBPs and could benefit the students she taught. Participant A was a first-year teacher with limited teaching experience. She stated that she often used her student teaching experiences to help her select instructional methods, and stated that she used behavior management

regularly. Participant A did not recognize her instructional strategies as EBPs, but rather, used what was appropriate to meet the needs of her students.

Participant B. Participant B identified EBPs and instructional strategies in his lesson plans, throughout the interviews, and during observations. He did use the EBPs and instructional strategies he had preidentified and was aware of the effectiveness of each of the strategies. He did not distinguish between EBPs and instructional strategies; however, the majority of Participant B's strategies were EBPs. The EBPs he used included: (a) direct instruction; (b) direct questioning; (c) developing higher order thinking skills; (d) identifying similarities and differences; (e) advance organizer; and (f) nonlinguistic representations. The instructional strategies he used were: (a) technology; (b) behavior management; and (c) homework.

Swanson and Hoskyn (2001) identified effective instructional strategies for secondary students with learning disabilities and noted that organization and explicit practice contributed the greatest proportion of positive outcomes for students, providing the opportunity to scaffold new information and relate it to previously learned information, thereby increasing the likelihood of retention. Participant B was observed using scaffolding strategies to teach difficult concepts to students with significant disabilities. Participant B utilized scaffolding opportunities during World History instruction in the form of nonlinguistic representations, diagrams of power distribution in pre-revolution France, and repeated questioning and discussion of events during the showing of an historical movie. He also provided students with instructional and informational summaries of important historical facts.

Swanson and Hoskyn (2001) also found that retention of learned information was greatly enhanced by explicit and distributed practice for adolescents with learning disabilities. Participant B first taught the students historical information and concepts and followed instruction by giving students work packets requiring them to answer questions, match facts, and complete a crossword puzzle. These activities were designed to enhance student contact with the historical information, improve their understanding of historical events, and help improve retention of factual information. Participant B used EBPs without recognizing them as such.

Participant C. Participant C identified EBPs and instructional strategies in his lesson plans, throughout the interviews, and during observations. He did use those he had preidentified and included several unique instructional strategies in his repertoire. He did not distinguish between EBPs and instructional strategies. The EBPs he used included: (a) teaching higher level thinking; (b) advance organizer and study packets; (c) cooperative learning; (d) note taking and summarizing; and (e) direct instruction. The instructional strategies he used were: (a) homework review; (b) quiz; (c) plug and chug; (d) trial and error; (e) humor; (f) rewards; and (g) Instructional Assistant (IA). Participant C was adamant about including the IA in his instructional strategies because he believed the assistance of another adult working with students with disabilities was a significant instructional strategy.

Participant C incorporated direct instruction, cooperative learning, and several review and practice opportunities into his math instruction. Based on previous research, his use of direct instruction and repeated practice could prove beneficial to his students.

Zheng et al, 2013, conducted a meta-analysis of studies examining interventions for students with math disabilities and concluded that direct instruction was effective when teaching math to students with disabilities. Peer-assisted instruction, however, failed to benefit students with math disabilities. Kroesbergen and Van Luit (2003) found that math strategies implemented by peer tutors were less effective than other interventions for students with disabilities and group work was not highly effective. Participant C's use of group work and peer-assisted instruction, however, most likely would not have a positive effect on student learning.

Swanson and Hoskyn (2001) found that retention of learned information was greatly enhanced by explicit and distributed practice for adolescents with learning disabilities and should be routinely integrated into instruction for students with LD. Participant C used board work, class work, review packets, and homework practice to assist his students in retaining learned math formulas and processes. He based using these interventions primarily on student needs and personal experience rather than research. Although he did not recognize the research component, Participant C enhanced his instruction by using three EBPs proven to be effective when teaching students with disabilities.

Decision making in special education. Previous research found it difficult to isolate specific factors that influenced teachers when determining instructional practices. Wanzek and Vaughn (2006) noted that despite potential benefits, EBPs may not be used to a high degree with students with HID. Kavale (2001) used meta-analyses to investigate decision making in special education and acknowledged the critical role decision making

plays in educating students with HID. Maccini and Gagnon (2002) determined that teacher knowledge of the content, teacher preparation, and teacher beliefs most significantly influenced decision making for teachers in special education. Research Question 3 examined the external and internal factors that impacted secondary level special education teachers when selecting and using EBPs and instructional strategies and will be addressed here as it is encompassed in the decision making process.

Boardman et al. (2005) conducted a qualitative study investigating elementary-level special education teachers' perceptions of EBPs and professional development. They found that teachers primarily based their decisions for selecting instructional strategies on the individual needs of their students and the effectiveness of a practice for student outcome, as determined through personal experience. This was a significant consideration identified as more important than whether or not a practice was research based. Similarly, the participants in the current study identified the most significant influences on their selection of instructional strategies as student needs, personal experiences, and the requirements of standardized testing.

Boardman et al. (2005), found several additional common themes among elementary special education teachers, including a lack of trust in the claims promoted by research studies and a belief that the students used in research studies did not resemble the students the teachers had in their classrooms. These same teachers cited limited resources and materials as impacting their selection of instructional strategies. The researchers considered that teachers' negative attitudes toward research could be based on lack of experience with practices specific to special education and suggested that

professional development was lacking. Many teachers claimed that the information shared during professional development was irrelevant to their students' needs. Several teachers cited their isolation from general education teachers and others with whom they might collaborate. The themes found by Boardman et al. (2005) with elementary teachers, are similar to those found in the current study among secondary level teachers of special education. It is not possible to state, however, that secondary level teachers share the same experiences as elementary level teachers and the results found by Boardman et al. (2005) may not be generalizable to secondary level teachers. Nonetheless, similarities in results do exist. Differences are also present and could be the result of variations in the structure of secondary and elementary curriculums. Secondary level teachers teach a limited number of subjects while elementary teachers typically teach all subjects. Secondary teachers see students for a limited number of classes per week while elementary teachers generally work with the same group of students each day. Secondary level students are older and may present different needs not seen at the elementary level.

Participant A. Participant A, the first-year teacher, cited lack of time and experience as barriers to researching effective strategies for instruction. She relied heavily on her English Department colleagues and other school professionals to provide guidance about how to teach and how to identify materials to use in her classes. She based her instruction on student needs, curriculum mandates, and standardized testing requirements. She did indicate that she had been exposed to EBPs during college preparation classes but had no experience using educational research.

Participant B. Participant B, the midcareer teacher, did not claim to use any EBPs; rather, he based his instruction on student ability levels and whether or not the students would enjoy the activities. Kavale (2001) indicated that decision making is a complicated process and when selecting instructional strategies for students receiving special education, many factors should be considered. Participant B held definitive opinions about using EBPs and instructional strategies and rejected the idea that EBPs were more effective than other non-research-based strategies. Participant B stated that in addition to teaching students with disabilities who often had limited reading and writing abilities, special educators were required to manage extensive paperwork. Time constraints and the inability to collaborate with peers were identified as limits to expanding the use of EBPs in his instruction.

Participant B expressed concern about the effectiveness of his instruction but stated he willingly put forth great effort to help students learn difficult concepts. In his class, students with limited reading and writing abilities were expected to recognize cause and effect, take a viewpoint and back it up, engage in self-examination, and be able to apply what they learned. Participant B designed his instruction in order to engage students in higher-level thinking and accomplish his instructional goals.

Participant C. Participant C discussed and described several influences on selecting instructional strategies. He cited student needs, standardized testing, curriculum mandates, and administrative expectations as influences on his selection of strategies. Boardman et al. (2005) identified a lack of trust among elementary teachers when they considered introducing instructional strategies for use with students with disabilities.

Participant C said that he frequently modified strategies to suit the needs of his students and in general, did not value educational research because the suggested strategies would not work in his teaching situation. He named think-pair-share as a strategy he used but did not demonstrate the strategy as it was intended. Research conducted by Gersten et al. (1997), Jitendra (2005a), and McLeskey and Billingsley (2008) indicated that failure to use instructional strategies with fidelity indicated that educators did not trust or fully understand the research supporting a strategy or did not have the necessary materials or administrative support required for implementation with fidelity. Participant C, the senior teacher, may not have fully understood the mechanics of certain instructional strategies.

All participants in the current study placed the educational needs of their students at the forefront of their instruction. Meeting the needs of their students was mentioned by all participants in all phases of the study. The ability levels of students were considered when instruction was planned, when instructional strategies were selected, and when teachers implemented their lessons. Teacher expectations for academic results, however, were commensurate with student ability. All teachers expressed awareness that the students they were teaching were considerably “different” when compared to general education students. Participant B, however, spoke openly about the “absurdity” of having students known to have disabilities learn using instructional strategies driven by educational research, and he indicated that “those types of things would not be appropriate for the type of students he taught.” He also was incredulous regarding the federal, state, and local district expectations requiring that general education and students with disabilities pass the same standardized testing. Participant B did not trust

educational research nor did he believe EBPs to be appropriate for use with students with disabilities. Boardman et al. (2005) found similar beliefs in elementary level special education teachers who described educational research as having no place in special education.

Theoretical themes. Based on related literature and previous research results, theoretical themes were developed to guide the development and end analysis of this descriptive case study. Using theoretical themes as part of the design, the current study used lesson plans, interviews, observations, and a questionnaire as the data sources to answer the Research Questions. Rosenbaum (2002) suggested that descriptive case study research may be enriched by following a design blueprint in order to focus on the data collected and the ways in which the data were analyzed. The results for all themes are described in Chapter 4-results. A discussion of the theoretical themes that guided this study follows.

The first theoretical theme was teachers with the most experience would be least likely affected by external factors such as supervisors, administrators, educational research, and parents when selecting instructional strategies (Boardman et al., 2005; Sencibaugh, 2007). The first theoretical theme proved correct. The teachers with the most experience, Participants B and C, were least impacted by external factors and relied on their experience to guide their instruction. While the experience of some teachers may guide them to use EBPs, as was the case with Participants B and C, not all teachers are able to turn experience into effective instruction for students with disabilities.

Administrators may expect experienced teachers to use effective instructional strategies almost intuitively, but these teachers are the most removed from educational training and may not be exposed to the educational research that could enhance their use of EBPs. As seen in this study, the experienced teachers rejected using EBPs and stated that EBPs were inappropriate for use with students with disabilities. If teachers were exposed to educational research related to the subject matter they taught and participated in training that demonstrated how EBPs could be integrated into their instruction, students may ultimately benefit from more effective instruction providing them with the opportunity to succeed academically.

The second theoretical theme was teachers with the least experience would be greatly influenced by administrative directives and parental requests when selecting EBPs (Boardman et al., 2005). This proposition proved to be partially correct. Participant A was observed weekly by the special education administrator at her school and she stated that she respected the administrator's comments and input to help her hone her instructional practice. Participants B and C were not affected by supervisors, administrators, or parents, and they did not feel bound by educational research.

All participants indicated that they believed they had administrative support regarding how they taught their classes and how they selected the instructional strategies they used. No one, however, experienced any significant external influence or interference from supervisors or administrators regarding how they taught their classes. Weekly observations by administrators or supervisors familiar with educational research and EBPs could be used to share research and suggest EBPs for use in specific situations.

Beginning teachers could benefit from continued learning and experienced teachers could learn new techniques. Administrators could be the initial catalyst to bring EBPs into the classroom.

The third theoretical theme was experienced teachers would more likely use instructional strategies based on personal experience and peer idea sharing compared to teachers with less experience (Gaughan 2008; Maccini & Gagnon, 2006). This proposition proved partly correct. Participant A, the beginning teacher, relied on her colleagues to guide how she taught her classes. Participants B and C stated that they primarily relied on previous teaching and personal experiences. Participant B indicated that he did not have enough time to share teaching ideas, strategies, and material with peers.

The fourth theoretical theme was experienced teachers would be least likely to use educational research to guide their instructional strategies (Burns & Ysseldyke, 2009; Gagnon & Maccini, 2007; Morgan et al., 2010). This theme was difficult to evaluate due to the fact that the most experienced teacher, Participant C, recently completed a doctorate level degree and was exposed to current research. Despite his recent contact with educational research, he did not utilize research when selecting EBPs and instructional strategies. This could have been a missed opportunity for the senior teacher. Had he embraced educational research, he could have brought his knowledge back to the classroom and shared what he learned with peers. Instead, he believed that educational research did not apply to the students with whom he worked. The beginning teacher and

midcareer teacher had neither the time nor inclination to use research to guide their instruction.

Researcher Impressions

The researcher's belief that teachers were aware of the requirement for using EBPs was incorrect, as was the belief that teachers could routinely identify EBPs. The researcher's impression that teachers were compliant to administrative requirements for using EBP was also incorrect, because there were no mandates in place for teachers to use EBPs. In the current study, carried out in two distinct school districts, neither building administrators nor school districts required teachers to use EBPs.

The expected results as proposed in the theoretical themes did not manifest in their entirety. Participant A was aware of the value of using EBPs but did not have the experience or the time to implement them during her teaching due to curriculum obligations. Participant B was unaware of the distinctions between EBPs and instructional strategies despite claiming to be able to define EBP. Participant C was aware of the concept due to recent professional studies but did not recognize which strategies were EBPs and misidentified or mislabeled instructional strategies, perhaps in order to provide examples of what he thought the researcher was seeking. He also did not use instructional strategies with fidelity based on researcher observations.

Participants were unaware of the federal and state recommendations and requirements to implement EBPs for students with HID. While Participants B and C in the current study were highly qualified teachers, they stated during the postobservation interviews that they did not use research to guide their practice, nor were they concerned

that they may be obligated to use EBPs. Participant A was certified in special education but not highly qualified in English, the subject matter she was teaching. This reluctance or aversion to using EBPs is consistent with research completed with elementary level special educators by Boardman et al. (2005). Despite requirements from NCLB (2002) and IDEIA (2004) to use EBPs, teachers do not routinely use EBPs nor do they have confidence that educational research can provide appropriate instructional strategies to use when teaching students with disabilities. Additionally, teachers indicated that a disconnection between research and the reality of their students and their many needs negatively affected teachers' use of EBPs. Clearly, requirements from the federal level did not impact the teachers in the current study. Requirements are set in law for school districts with failing reading rates to incorporate reading programs identified as EBP into their curriculum for struggling student. The use of EBPs is highly recommended for all schools and educational research is considered to be a valuable tool for improving student academic results. Sencibaugh (2007) described the benefits of teaching students with disabilities how to help themselves by using EBPs and cognitive strategies to improve their reading comprehension and noted the responsibility for teachers to train students to use these metacognitive strategies. The author stressed the value of having preservice candidates taught how to effectively implement EBPs when teaching students with disabilities.

Implications for Practitioners, Teacher Education Programs, and Policymakers

The results of this research suggest that the ways in which secondary level special education teachers determine the instructional strategies they use with students with

disabilities should be carefully evaluated for effectiveness. Based on the research of Boardman et al. (2005) and Sencibaugh (2007), educators are not using EBPs when teaching students with disabilities. Districts should monitor the effectiveness and success rates of the instructional programs they support at both the elementary and secondary levels and determine if teachers have access to, and the materials needed for, implementing the most effective methods of teaching students. Using EBPs could impact teachers, students, and most importantly, students. This research also supports previous studies that suggested that special educators generally rely on personal experience and ideas from peers and colleagues rather than educational research and EBPs when determining how to teach students with disabilities (Boardman et al., 2005; Sencibaugh, 2007).

At a school level, training that emphasizes the function of educational research and the effectiveness of EBPs should be developed for special educators, if it is not already in place. Schools that are struggling with low achievement rates should consider identifying programs that are based on educational research and that support teacher training regarding the value of using EBPs. The focus of this training should include federal and state instructional expectations, special education law and terminology, and the educational value of incorporating EBPs into instructional curriculum. Further, administrators or school district leaders would benefit from making concerted efforts to investigate educational research that may identify effective EBPs, incorporate educational research into their instructional culture, and provide teachers with the EBPs and required materials that could improve outcomes for students with HID.

In an effort to reduce the added time and effort needed to research educational literature and developing specific strategies, schools should explore developing a permanent or short term revolving research team of administrators, general educators, special educators, and other school professionals whose job it would be to review, current peer-reviewed educational literature that would yield recommendations for implementing EBPs in the classroom. Based on results and following recommendations, a team could focus on the needs of a particular school or student population and match EBPs to educational needs. Next, the team would identify training and funding to support teachers as they prepare to implement recommended EBPs into their classrooms. In this way, the research team could develop a repertoire of EBPs for use when teaching specific content, such as science or mathematics, to students with HID. Through division-wide training, department meetings, and periodic seminars, EBPs and the materials and procedures required to implement them with fidelity, could be demonstrated and provided to educators.

At the university level, teacher education programs should consider increased emphasis on the value of using educational research when teachers are in the early stages of developing their instructional strategies. Teacher training programs should demonstrate the effectiveness of using EBPs when teaching students with HID. Teachers prepared to work exclusively with students with HID in the self-contained classroom should be expected to utilize EBPs routinely and not occasionally. Support for teachers would be essential to the success of such an endeavor. Boardman et al. (2005) identified teachers' mistrust in training programs and educational practices developed in isolation.

Many special educators also work collaboratively with general education teachers. While teacher training programs may include practice designed to facilitate academic collaboration between general and special educators, there should also be a focus on ways to effectively integrate EBPs into instruction in order to benefit general education and special education students. All participants in the current study worked in the self-contained and inclusive classroom environments and the use of EBPs could carry over between the two settings for the benefit of all students. Successful implementation of EBPs into public schools lies with the governing bodies of school districts, including school boards and educational administrators.

The gap between educational research and educational practice has been investigated extensively and effective solutions have been difficult to identify. This gap has come to be known as the research-to-practice gap and has perplexed researchers for more than 20 years (Cook & Odom, 2013; Deschler, Ellis, & Lenz, 1996; Fuchs & Fuchs, 1996). The research-to-practice gap refers to the disproportional application of EBPs compared to the implementation of instructional strategies in educational settings (Cook, Smith, & Tankersley, 2012; Porter & McMaken, 2009). Support for staff, sufficient time for training, and sufficient materials would be essential to any proposed plan that involves a change in instructional practices (Boardman et al. (2005). Overall, there is great potential for the development and promulgation of EBPs that could prove beneficial for students with HID. Researchers have identified methods (EBPs) to improve student memory, reading skills, math skills, and overall work and organizational skills (Berkeley et al., 2010; Flynn et al. 2012; Sencibaugh, 2007; Wanzek et al., 2013).

Providing teachers with the exposure, professional development, , tools, and materials needed to implement EBPs with fidelity could empower them to become more effective in teaching required curriculum and when seeking to identify the most effective methods of instruction. Student academic outcome, test results, and graduation rates could be impacted by the use of strategies designed to improve student learning (Sencibaugh, 2007).

Limitations

There are six limitations to this research. Limitations included the timing of the study, the location of the study, the small number of participants, familiarity with the researcher, the psychometrics of the instruments, and thoroughness of member-checks.

The research was conducted in the mid-Atlantic region of the United States and included observations of teachers' instruction conducted with different self-contained classes during different times of the school year, which may have altered the type of instruction seen during classroom observations. Standardized testing was paramount with participants which may have been because standardized testing was scheduled to occur within weeks of the first two observations with Participants B and C. The small number of participants may have affected the validity of the research because the results were dependent upon individuals rather than a larger representative group of teachers from each experience category.

Two participants were previously known to the researcher from work situations, which may have influenced their responses and comments. These two participants may have been more open and honest as a result of a previously-established trust factor.

Participants completed member-checks following their interviews and observations, but two participants declined to complete member-checks at the conclusion of the study. Participants B and C declined to review the summaries of their contribution. Participant A did review the completed summary of her contributions. The participants in the current study were informed at the beginning of the preobservation interview and at the conclusion of the final interview that they had the opportunity to read, review, and inspect all material and components of this study. Member-checks are a valuable tool in validating the intentions of participants and in capturing the essence of their responses (Yin, 2014). The participants each completed reviews of the researcher's observation notes and material by reading longhand notes and typed observation transcripts following each interview and observation, but only Participant A completed a check of her contributions at the conclusion of the study. It is possible that participants faced time constraints and were unable to spend additional time reviewing notes, transcripts, and study conclusions.

Reliability for the EAQ was not established for this study. During the development of the EAQ, a pilot study was not conducted nor was the questionnaire sample-tested with teachers. Reliability was based on a previous questionnaire (Zipoli & Kennedy, 2005) whose reliability had been established for speech-language pathologists and not secondary special education teachers.

Future Research

Limited research has been conducted with secondary level special education teachers to identify how EBPs and instructional strategies are determined for use with

students with HID in the self-contained setting. Additional research, including case studies and observational studies a, may explore how greater numbers of teachers select and implement EBPs and instructional strategies are made and the degree to which EBPs are being implemented. Several changes in case study development should be considered when replicating or expanding this research. Maccini and Gagnon (2006) suggested that future studies should include case study research in order to better identify what determines teachers' usage of EBPs and stated that the use of observational data within a case study design would help to validate teachers' perceptions of instructional strategies.

Narrative qualitative studies could be conducted to develop cohesive, in-depth themes with individuals over a long period of time to evaluate to a greater degree the external and internal influences that affect teachers when selecting the instructional strategies they select and implement. Grounded theory studies could be conducted with a larger number of participants in order to fully develop a theory to explain a particular behavior over a longer period of time; in this case, the selection and implementation of EBPs and instructional strategies.

In order to develop additional case studies, the selection of participants should be expanded to include a greater representation of women and an overall larger number of teachers. In future research, when developing case studies, it would be beneficial to identify potential participants through a more neutral selection process in participating school districts. In addition, a larger number of case study participants would provide quantitative statistical data for comparison study rather than simple descriptive data available in the current study. Several researchers (Boardman et al., 2005; Maccini &

Gagnon, 2006; Swanson et al., 2012) have suggested that case study and observation research be used as ways to increase the knowledge base for this field. To expand upon this research, parents, administrators, and educational experts could be interviewed to widen the knowledge base regarding instructional expectations and beliefs about EBPs, as well as the actual ways in which instructional strategies are used to convey content information to students with HID at the secondary level.

Conclusion

In this multiple-case study, interviews and a questionnaire were used to identify how special education teachers at the secondary level selected and implemented instructional strategies when teaching students with HID. Participants were questioned about their use of educational research as well as the ways in which instructional strategies were developed and selected. The use of EBPs was examined as well as what most influenced teachers' selection and implementation of instructional strategies. In addition, the differences between beginning, mid-career, and senior educators were examined.

Teachers independently determine their methods and strategies of instruction based primarily on students' needs and personal experience (Boardman et al. 2005). Teachers primarily based their decisions for selecting instructional strategies on the individual needs of their students and the effectiveness of a practice for student outcome, as determined through personal experience (Sencibaugh, 2007). From this study as well as others, it is clear that despite federal recommendations and mandates requiring teachers to use EBPs teachers may simply not be compliant and administrators and

district level school leaders may not be holding educators accountable to the legal standards to use EBPs when teaching students with HID.

Appendix A

IRB Approval



Office of Research Development, Integrity, and Assurance

Research Hall, 4400 University Drive, MS 6D5, Fairfax, Virginia 22030
Phone: 703-993-5445; Fax: 703-993-9590

DATE: March 1, 2017

TO: Margaret King-Sears, PhD
FROM: George Mason University IRB

Project Title: [562541-1] Evidence-based Practices and Secondary Special Education Teachers

SUBMISSION TYPE: Revision

ACTION: APPROVED

APPROVAL DATE: March 1, 2017

EXPIRATION DATE: February 28, 2018

REVIEW TYPE: Expedited Review

REVIEW TYPE: Expedited review category #5

Thank you for your submission of Revision materials for this project. The George Mason University IRB has APPROVED your submission. This submission has received Expedited Review based on applicable federal regulations.

Please remember that all research must be conducted as described in the submitted materials.

Please remember that informed consent is a process beginning with a description of the project and insurance of participant understanding followed by a signed consent form unless the IRB has waived the requirement for a signature on the consent form or has waived the requirement for a consent process. Informed consent must continue throughout the project via a dialogue between the researcher and research participant. Federal regulations require that each participant receives a copy of the consent document.

Please note that any revision to previously approved materials must be approved by the IRB prior to initiation. Please use the appropriate revision forms for this procedure.

All UNANTICIPATED PROBLEMS involving risks to subjects or others and SERIOUS and UNEXPECTED adverse events must be reported promptly to the IRB office. Please use the appropriate reporting forms for this procedure. All FDA and sponsor reporting requirements should also be followed (if applicable).

All NON-COMPLIANCE issues or COMPLAINTS regarding this project must be reported promptly to the IRB.

The anniversary date of this study is February 28, 2018. This project requires continuing review by this committee on an annual basis. You may not collect data beyond this date without prior IRB approval.

A continuing review form must be completed and submitted to the IRB at least 30 days prior to the anniversary date or upon completion of this project. Prior to the anniversary date, IRBNet will send you a reminder regarding continuing review procedures.

Please note that all research records must be retained for a minimum of five years, or as described in your submission, after the completion of the project.

Please note that department or other approvals may be required to conduct your research in addition to IRB approval.

If you have any questions, please contact Karen Motsinger at 703-993-4208 or kmotsing@gmu.edu. Please include your project title and reference number in all correspondence with this committee.

GMU IRB Standard Operating Procedures can be found here: http://oria.gmu.edu/1031-2/?_ga=1.12722615.1443740248.1411130601

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within George Mason University IRB's records.

Appendix B

Informed Consent Form

Evidence-Based Practices and Secondary Special Education Teachers

RESEARCH PROCEDURES

This research is being conducted in order to identify the influences on teachers when determining instructional strategies, including evidence-based practices. If you agree to participate, you will be asked to participate in a 30 minute pre-observation interview, to allow the researcher to observe you in the classroom for approximately 60 minutes, followed by a 30 minute post-observation interview, and complete a 30-item questionnaire. You will also be asked to arrange a final interview for approximately 30 minutes no more than five days after the post-observation interview. All interviews will be audio-recorded. You will be asked to review written transcripts to confirm correct information as “member-checks.” Transcripts will be maintained on an electronic hard disk protected with security password and restricted access for five years after the conclusion of this study. After this time, they will be electronically erased from the datahard disk memory. Hardcopy documents will be destroyed via shredding and proper disposal.

RISKS

There are no foreseeable risks for participating in this research.

BENEFITS

There are no benefits to you as a participant other than to further research in special education and instructional practices.

CONFIDENTIALITY

All information, data and results from this study will be confidential. Pseudonyms will be used for all participants and only the researcher will have access to the identification key. Audio tapes will be maintained until information is transcribed (approximately six months) and will be stored electronically. All audio-recordings will be erased electronically from the recording device storage system five years after the study ends. Data will be transcribed and maintained on a computer hard disk without identifying information and accessible through password-protected login accounts available only to the student researcher and principal investigator. Transcripts will be maintained on an

electronic hard disk protected with security password and restricted access for five years after the conclusion of this study.

All material will be maintained in archived files for approximately five years after the conclusion of this research. At this time, all material will be electronically erased from the datahard disk memory. Hardcopy documents will be destroyed via shredding and proper disposal.

PARTICIPATION

Your participation is voluntary, and you may withdraw from the study at any time and for any reason. If you decide not to participate or if you withdraw from the study, there is no penalty or loss of benefits to which you are otherwise entitled. There are no costs to you or any other party.

CONTACT

This research is being conducted by Margaret King-Sears, PhD. and Nancy J. Emanuel at George Mason University. Dr. King-Sears may be reached at 703-993-3916/mkingsea@gmu.edu and Nancy Emanuel may be reached at 703-335-6051/nemanuel@masonlive.gmu.edu for questions or to report a research-related problem. You may contact the George Mason University Office of Research Integrity & Assurance at 703-993-4121 if you have questions or comments regarding your rights as a participant in the research.

This research has been reviewed according to George Mason University procedures governing your participation in this research.

CONSENT

I have read this form and agree to participate in this study.

Printed Name

Signature

Date of Signature

Appendix C

Classroom Observations Procedures

Using long-hand field notes, the following information will be collected during the classroom observations:

- Description of all classroom activities, the lesson and lesson objective
- Student groupings (e.g., peer pairing, small group activities, large group activities,)
- All teacher/student dialogues and interactions
- Instructional strategies (observed, stated, referenced, or implied), the type and use of any materials, and the use of any technology as an instructional strategy

Field notes will consist of long-hand descriptions of activities and include the use of any abbreviations, arrows, or drawings developed by the observer for ease of note taking. The purpose of the field notes is to have a permanent record of the instructional strategies, teacher-student interactions and dialogues, student behaviors, and any other activities during classroom instruction. The field notes will be transcribed to a typed format and analyzed for categories of instructional strategies. Classroom design and structure and any visually displayed evidence of the use of instructional strategies were noted. The categories and duration of instructional strategies, student activities (e.g., assisting the teacher or other students, assisting with material or technology, leaving the classroom,

engaging in disruptive or attention-seeking behaviors), and the use of any classroom management techniques during the class instruction, were noted.

Appendix D

Special Educators' Decision-Making Process When Selecting Instructional Interventions

Table D1

Special Education Teachers' Perceptions of Research-Based Practices

Study	Design	Participants	Setting	Study Focus	Outcomes
Boardman et al. (2005)	Qualitative study - Focus group interviews	-30 LD SPED teachers -19EBD SPED teachers	Public elementary schools -Florida & Texas	Elementary level special education teachers' perceptions of evidence-based practices and professional development	Based decisions for selecting instructional practices on student indiv. needs & effect. of practice for student outcome, based on pers. exper.

Table D2

Special Education Teachers' Perceptions of Instructional Practices and RTI

Study	Design	Participants	Setting	Study Focus	Outcomes
Swanson et al. (2012)	-Qualitative study -Purposive sampling -2 years -Classroom observations	-17 Elem. SPED teachers during the 1 st year -12 d Elem. SPED teachers during the 2 nd year	Public elementary schools -Grades 3-5	Three aspects of RTI implementation: (a) perceptions of sped teachers & RTI instructional framework; (b) the extent educators taught critical components of reading & math to students in Gr. 3 -5; & (c) the extent teachers used evidence-based practices to teach reading & math.	Benefits noted: -access to early intervention for students -meeting unique student needs -staff collaboration,

Table D3

Decision Making in Special Education

Study	Design	Participants	Setting	Study Focus	Outcomes
Kavale (2001)	-Qualitative study	-17 Elem. SPED teachers during the 1 st year -12 d Elem. SPED teachers during the 2 nd year	Public schools	Value of using meta-analyses for decisions regarding interventions in sped for psycholinguistic training - Perceptual-motor training - Treatments for attention deficit disorder (ADHD) - Social skills training	-decision making is a complicated process - meta-analyses of research a powerful tool

Table D4

Secondary Mathematics

Study	Design	Participants	Setting	Study Focus	Variables	Outcomes
Gagnon and Maccini (2007)	-Survey study - closed-ended and ordinal questions	-253 secondary math special educators -224 secondary math general educators	Public secondary schools	General and special educators' perceptions of "(a) def. of math; (b) familiarity w/ course topics; (c) effectiveness of methods courses; (d) prep. to use & freq. - use of effective instr. strats.; & (e) factors contrib. to use of effective instr. practices"	-Teachers' perceived knowledge of math topics for special education teachers - the number of methods courses taken by general education teachers	-35.97% (n=91) special educators responded -33.92% (n=76) general educators responded (low survey response) - low correlations for teacher beliefs & orientations & use of instructional strategies such as direct instruction, graduated instruction, & student groupings *Recommend case study and observation research to continue investigating teachers' decision making process

Appendix E

School Districts' Letters of Permission



County Public Schools

Ed.D.
Associate Superintendent for Instruction

Excellence by Design

November 3, 2014

Ms. Nancy J. Emanuel
Ph.D. Candidate
George Mason University
8532 Yoder Street
Manassas, VA 20110

Dear Ms. Emanuel:

Your request to work with two teachers at [redacted] High School as a part of your study on how special educators select and implement evidence-based practices and instructional strategies is approved. The principal of [redacted], has given his consent, and based on your correspondence on October 24, 2014, the teachers have given their consent as well.

You will need to comply with our Human Resources protocols for being in our schools as well as any protocols [redacted] will require.

I wish you a productive dissertation journey.

Sincerely,

[redacted signature], Ed.D.
Associate Superintendent
For Instruction

cc: [redacted] Principal,
[redacted] Human Resources Assistant Director



Assistant Superintendent
for Instruction

County Public Schools

to ensure all students an excellent education

April 9, 2015

Ms. Nancy Emanuel
8532 Yoder Street
Manassas, Virginia 20110

Dear Ms. Emanuel:

This letter verifies that you, Ms. Nancy Emanuel, a doctoral candidate with George Mason University, have been granted permission to conduct research with County Public Schools through August 2015. All permissions granted on the original Request to Collect Data Form dated May 6, 2014, have been extended.

Should you need to contact me, please feel free to do so via email at n12.va.us or by phone at

Regards,

Appendix F

Email Script

Dear _____,

I am currently conducting a research study as a requirement for my PhD about the ways in which special education teachers at the secondary level use instructional strategies and evidence based practices. I would like to invite you to consider volunteering as a case study participant. By being included in this study, you will be contributing to the base of knowledge about the ways in which teachers design their instruction for students with disabilities. There are no risks or benefits for you in volunteering for this study.

Your obligation for this study will include:

Phase I – Background information (seven questions – answered electronically)

Phase II – Pre-observation interview (approx. 20 minutes - seven questions - audio recorded)

Phase III – One Classroom observation (approx. 60 + minutes)

Phase IV - A– Post-observation interview (approx. 20 minutes - five questions - audio recorded)

Phase IV - B – EAQ (30 questions – completed independently)

Phase V – Final interview (approx. 20 minutes - ten questions - audio recorded)

Please consider being a part of this study and contributing to the knowledge about the ways in which special education teachers design and develop their methods of instruction. I truly appreciate your consideration and look forward to hearing from you.

Sincerely,

Nancy J. Emanuel
xxxx xxxx Street
xxxx, VA xxxxx
703-xxx-xxxx
xxxx@xxxx.com

Appendix G

Participants' Lesson Plans

Participant A Lesson Plan 1

Lesson Plan
Part A
SC English 9
Friday Dec 5

- Everyday Edits 5mins
- Literary Terms Quiz 10 mins
- Research Papers 45mins
- Literary Terms Slides 50 mins

Funny youtube

Objectives

- Grammar Practice
- Organizing & Writing a
Proper paper w/ citations

Participant A Lesson Plan 2

Thursday December 11

Lesson Plans
SC English 9-1st Block

Literary Terms Story Parts - 10 min

Romeo & Juliet Act 3 - 20 min

Research Paper - 50 min.

Power Point on Characterization 10 min

Participant B Lesson Plan 1

Lesson Plan. Participant B

How Will You Cause Learning Today?

Subject WHII
Date 5/29 – 6/6
Grade Level 10
Period Pd. 7
Lesson Topic: World War II
SOL's 12 a-d

Objective:

WHII.10 Student will demonstrate knowledge of the worldwide impact of the Holocaust through the movie Schindler's List.

Before (Bell Ringer)

Key Questions to be discussed:

1. View selected photos – What are your impressions based ONLY on what you see?
2. Characters (each photo will be revealed during the course of the film)

Discussion of main characters – strengths and weaknesses as well idiosyncrasies

- a. Oskar Schindler
- b. Amon Goeth
- c. Itzak Stern
- d. Poldek Pfefferberg
- e. Helen Hirsch

Intro VALUES

3. We are not all the same!
4. They often are associated with how we deal with each other
5. Everyone has a way of ranking their values
6. It's not always easy to recognize what we value
7. Sometimes we are unpredictable!

Intro ETHICS

Examine various moral dilemmas

During (Activity)

PowerPoint with open class discussions (teacher driven) on

Part I – Examining our VALUES

- a. What is the most important thing in your life?
- b. What is one thing (simplest form) that you simply cannot deal without?
- c. Do you ever lie to friends and/or family to keep from being embarrassed?
- d. If today was the last day of your life, would you want to do what you are doing today?

Participant B Lesson Plan 2

2014-15



10/19/2014 - 10/25/2014
Week View

Monday 10/20/2014	Tuesday 10/21/2014	Wednesday 10/22/2014	Thursday 10/23/2014	Friday 10/24/2014
World History II TSWBAT: NO SCHOOL Teacher Work Day	World History II TSWBAT: describe how Enlightened ideas contributed to causing the French Revolution Before: Setting the state for the French Revolution: What was life like in France at this time? Dealing with an outdated Feudal society! Weak leadership from the King. During: PowerPoint with skeletal notes Discuss the "Old Regime" and the Estate System All factors leading up to the revolution <ul style="list-style-type: none"> • Bad harvests • high prices • high taxes • Enlightened ideas • weak leadership After: Begin Revolution Begins (HS) Begin French Revolution (Part 1) Questions Standards: WHII.6.e Describing the French Revolution	World History II TSWBAT: Identify and describe the key events of the French Revolution to include the Storming of the Bastille, the execution of a king, and the Reign of Terror. Before: Review topics discussed: Factors leading to the French Revolution During: PowerPoint with skeletal notes Discuss the following: <ul style="list-style-type: none"> • The National Assembly (3rd Estate takes action) • Storming of the Bastille • The Great Fear • Bread Riots After: French Revolution Part II Questions Standards: WHII.6.e Describing the French Revolution	World History II TSWBAT: Identify and describe the key events of the French Revolution to include the Storming of the Bastille, the execution of a king, and the Reign of Terror. Before: Review The collapse of the Old Regime During: PowerPoint with skeletal notes Discuss: <ul style="list-style-type: none"> • The National Assembly reforms French society • Struggle for political power • France goes to war - European powers try to stop them from overthrowing the King • The execution of Louis XVI • The reign of terror After: Begin - The Execution of a King (HS) Standards: WHII.6.e Describing the French Revolution	World History II TSWBAT: explain the rise Napoleon through his strategic efforts to become the "emperor" of France, as well as his fall from power following the invasion of Russia Before: Review the failure of the National Assembly Review the Committee on Public Safety and the Reign of Terror During: PowerPoint with skeletal notes Discuss: <ul style="list-style-type: none"> • Napoleon crowns himself emperor of France • Stabilizing France - Napoleonic Code • Going to war with Europe - Invasion of Russia • Napoleon's downfall - Waterloo Play - "You Are Napoleon" game After: Begin Rise of Napoleon (HS) Begin French Revolution Questions Part III Standards: WHII.6.e Describing the French Revolution

Participant C Lesson Plan One

Alg. Pt. 2 LESSON PLAN

Chapter 3 & 4 SUBJECT:

OBJECTIVE

Demonstrate the knowledge of how to write and graph direct variations. Demonstrate an understanding of how to solve problems involving direct variation. Be able to demonstrate how to investigate relationships between quantities by using points on scatter plots.

Vocabulary

Direct variation, constant of variation, constant of proportionality, nonlinear function, rate of change, bivariate data, line of fit, scatter plot, linear interpolation, and slope

Information and Data: (what students must do to demonstrate their understanding of (sect.4.3 & 4.6)

- 1- Apply concepts and skills to write and graph direct variations.
- 2- Understand and be able to apply the following Terms: Vocabulary list from above.
- 3- Be able to determine the domain and range of the function.
- 4- Understand how to solve problems involving direct variation.
- 5- Be able to investigate relationships between quantities by using points on scatter plots.
- 6- Be able to use lines of fit to make and evaluate predictions.
- 7- Be able to solve equations that are functions and know how to write them in a form called function notation.
- 8- Understand how the slope of a line passes through each pair of points and be able to find the coordinates given the slope.

Assessment: (check for understanding and higher level engagement)

- 1- **Warm-Up Slip:** Students will answer questions from the previous lesson that derived from the most important information learned from the state standards.
- 2- **New Information:** Students will receive the objective for the lesson, will take notes, will complete guiding instruction, will perform group instruction, and will check for understanding.
- 3- **Exit Ticket:** Student will answer questions from yesterday's homework to check again for understanding.
- 4- **Homework Review:** Students will start their homework with guided instruction, have time to ask questions, and will work independently on their homework.
- 5- **Pre-Test/Post-Test:** Students will get to test their prior knowledge before all new chapters are introduced. Students will take a post test on the completion of the chapter to check for understanding.
- 6- **Weekly check for understanding:** Before students take weekly quiz, they will write down on a piece of paper examples of problems they still do not understand at the end of the week and we will go over before the quiz/test.

7- Closure: Different students each day will be picked at random to present and explain all the information that was discussed in the daily lesson with the class.
8- Remediation available for students who need extra help during the zero period before school and after school as requested by the individual student.

Lesson Plans for 12-5-14 for

Period 1: Planning

Period 2 (room 401)& Period 3 (room 438): Self-contained Algebra 1 Part 1

1. Students will work independently or with a study buddy to complete the elimination and inequality assignment (page 3 #1-10, page 5 #1-16)
2. Review the directions for completing the assignment with the students and check for understanding.
3. Model as many problems from each page to help the students understand what they will be doing and to check for understanding.
4. Go over the previous night's homework. Have the students put their work on the board. Have students explain how they got their answers.
5. Students will take a quiz at the beginning of the period to check for mastery of the previous day's assignment.
6. No students are to leave the class for the first fifteen minutes and the last fifteen minutes of class per school policy.

Period 4: Inclusion Algebra 1 Part 1 with Mr. _____, I co-teach an Algebra 1 inclusion class with Mr. _____ assist all students in the class with completing their educational goals.

Appendix H

Observation Completion Checklists

Table H1

Participant Completion Checklist for Each Observation

Name: _____

Phase	Material	Date of Receipt or Completion	Transcription Completed
Phase I Preliminary <i>(two days before observation)</i>	Background information		
Phase II Preobservation Interview <i>(same day as observation)</i>	Responses to interview questions		
Phase III Observation	Classroom observation field notes		
Phase IV A. Postobservation Interview <i>(same day as observation or w/in than 5 days of observation)</i> -----	Responses to interview questions -----		
B. EAQ <i>(w/in 5 days of postobservation interview)</i>	Responses to EAQ		

Phase V Final Interview (w/in 15 days of <i>final observation</i>)	Responses to interview questions		
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Table H2

Participant Schedule Calendar Example

Name: _____

Monday	Tuesday	Wednesday	Thursday	Friday
December 1 Phase I: Preliminary - Background Information	December 2	December 3	December 4 Phase II: Preobservation Interview Phase III: Observation 1 Phase IV A: Post observation Interview	December 5
December 8	December 9	December 10	December 11	December 12 Phase II: Preobservation Interview Phase III: Observation 2 Phase IV A: Postobservation Interview
December 15	December 16	December 17	December 18	December 19 Phase IV: B EAQ Phase V: Final Interview
December 22	December 23	December 24	December 25	December 26

Table H3

Consolidated EBP's and Instructional Strategies

EBP or Instructional Strategy	Participant A	Participant B	Participant C
<ul style="list-style-type: none"> • Cooperative learning/Small group/Partner work • Practice/review • Remediation/re-teaching • Formative assessment/Quizzes • Reviewing/recalling/recapping • Chunking • Direct instruction • Summative assessment • Note cards/Note taking • Guess • Modeling • Engagement/Enhance the experience) • Mnemonics • Questioning/discussion • Think/pair/share • Strengths and Weaknesses • Technology: movie, laptop, websites, PowerPoint/Calculator/Visual representations/Whiteboard • Check for understanding • Background information • Discovery learning: Higher level thinking • Pretest/posttest • Pacing guide/Tracking/Timing • Warm-up exercises/ • Peer work/Tutoring/After school remediation • Review packet/ Homework • Motivational techniques/Rewards • IEP accommodations • Parental contact • Instructional Assistant • Memorize/Self-teach/Study/Highlight • Data 			

Table H4

Classroom Observation Cover Sheet

School:	Location:
Teacher:	Grade/Subject: Lesson Objective:
Class Size	Number of Student IEP: (disability label)
Observer:	Date & Time of Day:

Appendix I

Experience and Attitude Questionnaire (EAQ)

Evidence-based practices are defined as those strategies, interventions, or programs that have resulted in consistent positive results when experimentally tested (Marzano, 2007, p. 39).

I. Experience and Attitude Questionnaire (EAQ) (Zipoli & Kennedy, 2005, p. 220)

“In the last 6 months, I have used the following sources of information when determining which evidence based practices to use with students with disabilities.”

Please select the best response.

	Strongly Agree (1)	Agree (2)	Disagree (3)	Strongly Disagree (4)	Unfamiliar to me (5)
1.) My own experience.	1	2	3	4	5
2.) Opinions of colleagues.	1	2	3	4	5
3.) Expert consultation, (<i>e.g., Behavior specialist, OT, PT, S/L Pathologist</i>)	1	2	3	4	5
4.) Employer sponsored professional development	1	2	3	4	5
5.) University courses outside of my place of employment	1	2	3	4	5

6.) Educational textbooks.	1	2	3	4	5
7.) Video or audiotapes of evidence based practices.	1	2	3	4	5
8.) Internet resources I've searched for independently.	1	2	3	4	5
9.) Practitioner articles from professional journals.	1	2	3	4	5
10.) Original Research Articles (ORA) from Professional Journals -If you have read ORA, and remember the type of research used, identify that type from the following: a.) meta-analysis of randomized, controlled studies	1	2	3	4	5
b.) results from a randomized, controlled study.	1	2	3	4	5
c.) results from a controlled study without randomization.	1	2	3	4	5
d.) results from a quasi-experimental design.	1	2	3	4	5
e.) results from a single-subject design study	1	2	3	4	5
f.) case studies	1	2	3	4	5

II. Evidence Based Practices (Gaughan, 2008; Zipoli & Kennedy, 2005)

Please respond to the following statements.

	Strongly Agree (1)	Agree (2)	Disagree (3)	Strongly Disagree (4)	Unfamiliar to me (5)
11.) I have sufficient professional time to implement all the instructional strategies that I would like to use in order to meet the instructional needs of students with disabilities I teach.	1	2	3	4	5
12.) I have the administrative support to implement evidence based practices that I would like to use in order to meet the instructional needs of students with disabilities I teach.	1	2	3	4	5
13.) Evidence based practices should play a role in my work with students with disabilities.	1	2	3	4	5
14.) Specific evidence based practices should be considered when making instructional decisions for students with disabilities.	1	2	3	4	5
15.) Evidence based practices improve academic outcomes for students with disabilities.	1	2	3	4	5
16.) Evidence based practices should be selected based on research and scientific studies that assess the usefulness of treatments or protocols	1	2	3	4	5
17.) Evidence based practices are impractical for everyday work with students with disabilities.	1	2	3	4	5
18.) I have sufficient resources to implement evidence based practices.	1	2	3	4	5

19.) The amount of research in my area of interest is sufficient to support me when implementing evidence based practices.	1	2	3	4	5
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III. Implementing Evidence Based Practices (Gaughan, 2008; Zipoli & Kennedy, 2005)

Please respond to the following statements.

	Strongly Agree (1)	Agree (2)	Disagree (3)	Strongly Disagree (4)	Unfamiliar to me (5)
20.) Employer provided professional development facilitates the use of evidence based practices.	1	2	3	4	5
21.) I am able to define what it means to use research-based instructional strategies.	1	2	3	4	5
22.) My teacher preparation program prepared me to incorporate evidence-based practices into my daily instruction with students with disabilities.	1	2	3	4	5
23.) I access research through professional journals through personal subscription, colleague sharing, or employer provided subscriptions.	1	2	3	4	5
24.) I believe parents should have a say in determining which instructional strategies are used with students.	1	2	3	4	5
25.) Evidence based practices based on research are generally effective when I use them with my students.	1	2	3	4	5
26.) Evidence based practices should be incorporated into IEPs.	1	2	3	4	5

27.) I feel confident in my ability to read and understand the research literature.	1	2	3	4	5
28.) I feel confident in my ability to apply research to my work with students.	1	2	3	4	5
29.) Keeping current in the research literature in special education is a lifelong professional responsibility.	1	2	3	4	5

IV. Evidence Based Practices (Gaughan, 2008; Zipoli & Kennedy, 2005)

Please respond to the statement in item # 30. .

	Daily use w/all classes w/fidelity . (1)	Consistent use (3-4 days per week) w/ most classes w/fidelity (2)	Consistent use (3-4 days per week) w/most classes w/ modifications (3)	Occasional use (2-3 days per week) w/some classes (4)	Rarely use (0-1 days per week) (5)	Never use (6)
30.) Rate your overall use of evidence based practices.	1	2	3	4	5	6

V. Evidence Based Practices

Please add any other comments in the space provided.

Appendix J

Meta-Analyses of Interventions for Students with High Incidence Disabilities

Table J1

Reading Interventions

Study	Design	Participants	Setting	Intervention	Dependent Measures	Outcomes/ Effect Size
Flynn et al., 2012	Experimental design studies	Grades 5-9, ages 9-15	Public upper elementary & middle schools	Multiple interventions (18 instructional procedures & interventions originally identified by Swanson & Hoskyn (1998))	Reading outcomes on norm-referenced reading measures	Norm-ref. reading measures – ES - 0.41 Word ID – 0.41 Decoding – 0.43 Comprehension- 0.73
Wanzek et al., 2013	Experimental, quasi-experimental, single group, or single case studies	Grades 4-12, ages 10-18	Public upper elementary & middle schools	Multiple interventions- reading comp., reading fluency, word reading, word reading fluency, spelling	Reading outcomes on measured interventions	ES: -reading comp.- 0.10 -reading fluency- 0.16 -word reading -0.15 -word reading fluency – 0.16 -spelling – 0.15
Berkley, Scruggs, & Mastropieri (2010)	Experimental quasi- experimental pre-post designs	Grades K-12	Public elementary, middle & high schools	Fundamental reading skills instruction, text enhancements, & quest./strat. instruction, peer-mediated instruction & self-regulation	Reading comprehension outcomes -criterion- referenced measures & norm-ref. tests	-Criterion-ref – Mean Effects: 0.69 for treatment effects 0.69 for maintenance effects 0.75 for generalization effects

Study	Design	Participants	Setting	Intervention	Dependent Measures	Outcomes/ Effect Size
Sencibaugh (2007)	Experimental design -single-group design with multiple treatments	Grades K-12	Public elementary, middle & high schools	Reading comprehension strategies -visually dependent & auditory/lang. dependent	Reading comprehension outcomes	Norm-ref. – 0.52 for treatment effects Visually dependent reading comp. – 0.94 Auditory/lang. dependent – 1.18
Therrien (2004)	Experimental design	Grades K-12, ages 5-18	Public elementary, middle & high schools	<i>Non Transfer Fluency & Comp.</i> Repeated reading -Cued reading -Corrective feedback -Performance criteria -Adult or peer instructor -Modeling -Corrective feedback -Performance criteria -Comprehension component -Charting	Reading fluency & reading comprehension	<i>Non Transfer Fluency & Comp. ES</i> Repeated reading 0.83/0.67 -Cued reading 0.72/0.66 -Corrective feedback 0.68/0.88 -Performance criteria 0.81/0.66 -Adult or peer instructor 1.37/0.71 -Modeling 0.40/0.10 -Corrective feedback 0.51/0.23 -Performance criteria 1.70/0.38 Comprehension component 0.39/0.28 -Charting 0.40/0.44

Table J2

Math Interventions

Study	Design	Participants	Setting	Intervention	Skill	Dependent Measures	Outcomes
Kroesbergen and Van Luit (2003)	Experimental w/ control condition or a repeated-measures single subject design	Elementary students	Public elementary schools	DI w/ adult Technology Peer tutors	Preparatory mathematics, basic skills, and problem solving strategies	Preparatory mathematics, basic skills, and problem solving strategies	-Self-instruction – most effective for teaching problem-solving -learning basic skills, direct instruction w/adult-most effective -Interventions w/peer tutors-less effective compared to other interventions
Zheng, Flynn, and Swanson (2013)	Experimental w/ control condition or a repeated-measures single subject design	Grades K-12, ages 5-18	Public elementary, middle & high schools	Word problem solving interventions	-Sequencing, -task reduction - advanced organizers -questioning – elaboration - strategy cues - skill modeling.	-Solution accuracy on word problems - Computation skills, concept understanding, and labeling were secondary	-Solution accuracy - word problems Exper. ES – 0.95 Single sub. – 0.90 *explicit instruction effective - Peer-assisted instr.-no benefit to students -Instr. interventions -more effective for students w/ MD-compared to students w/ MD & read. Dis. (RD).

Table J3

Peer Tutoring

Study	Design	Participants	Setting	Intervention	Skill	Dependent Measures	Outcomes
Bowman-Perrot et al. (2013)	Single-case design	Grades 1-12	Public elementary, middle & high schools	Peer tutoring w/ & w/out rewards	Learn content through the repetition of key concepts	Content & key concepts learning/ testing	-overall effect of peer tutoring -ES =0.75 - using rewards ES=0.75 *more effective for gr. 7-12 than elementary

Table J4

Academic, Social, or Cognitive Interventions

Study	Design	Participants	Setting	Intervention	Skill	Dependent Measures	Outcomes
Swanson and Hoskyn (2001)	Experimental design	Ages 10 to 19 years	Public upper elementary, middle & high schools	Questioning, - sequencing & segmentation, - explicit skill modeling -organization and explicit practice - small-group setting - indirect-teacher activities- technology- scaffolding	Reading Math Writing/spelling Cognitive processing	Academic outcomes	Overall ES= 0.80 Organization and explicit practice w/ advanced organizers providing scaffolding produced greatest ESs
Scruggs, Mastropieri, Berkley, and Graetz (2010a)	Experimental design	Secondary students – gr. 7-12	Public middle & high schools	-Mnemonic strategies – -Spatial Org. -Classroom Learning Strats -Computer-Assisted Instruction (CAI) -Peer Mediation -Study Aids -Hands-On or Activity-Oriented Learning - Explicit instruction	interventions - science or social studies & a comb.	Academic outcomes	Effect sizes: Mnemonic strategies – 1.47 Spatial Organ -0.93 -Classroom Learning Strats. 1.11 -Computer-Assisted Instruction (CAI) 0.63 -Peer Mediation 0.86 -Study Aids 0.94 Hands-On or Activity-Oriented Learning – 0.63 Explicit instruction – 1.68

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Biography

Nancy J. Emanuel has been involved in the field of education for over 25 years. In addition, Nancy served nine years in the United States Navy as a Russian Linguist. She graduated from the Bridgewater State College in 1978 with a Bachelor of Arts in History. In 2003, she received her Master's in Special Education from The University of Virginia. Nancy has worked as a special education teacher in elementary through high school settings, and served as a child study chairperson as well as a Department Supervisor of Special Education at the high school level. Nancy is the Director/Coordinator of the Special Religious Development (SPRED) Program at All Saints Church in Manassas, Virginia. She is also a Court Appointed Special Advocate (CASA) for abused or neglected children.

Nancy's research interests include the effectiveness of evidence-based practices and instructional strategies as academic interventions, integrating special education services into general education classes, and academic motivation for children with severe disabilities.