SPECIAL EDUCATORS' PERCEPTIONS OF HIGH-LEVERAGE PRACTICES

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ABSTRACT

The most effective way to improve the performance of students is to improve the practice of their teachers. Moreover, providing highly effective, research-based instruction responsive to the unique needs of students with disabilities is vital for quality outcomes to occur. High-Leverage Practices (HLPs) were developed by the Council for Exceptional Children (CEC) as a list of research-based, frequently occurring, highly effective practices that special educators should be able to successfully implement. A mixed methods design was used to investigate special educators' perceptions of HLPs in the area of instruction. This study explored the following research questions:

1. How do special education teachers perceive their knowledge of HLPs in instruction?
2. How do special education teachers perceive their skills in implementing HLPs in instruction?
3. How do special education teachers perceive their opportunities to implement HLPs in instruction?

Outcomes indicated that special education teachers in Hawai'i are knowledgeable and skilled in the majority of the HLPs, however there are numerous barriers preventing them from implementing the practices on a regular basis. Those barriers include time, co-teacher control, fully self-contained settings, and lack of support or resources. It is promising for the field of special education that special educators are knowledgeable, skilled, and have opportunities to implement the majority of HLPs in instruction. While this study concentrated on the HLPs in instruction, further research should involve HLPs in all areas, to include assessment, collaboration, and social/emotional/behavioral.

TABLE OF CONTENTS

ABSTRACT III

LIST OF TABLES VI

CHAPTER 1 1

INTRODUCTION 1

PURPOSE OF THE STUDY 4

RESEARCH QUESTIONS 5

DELIMITATIONS 5

DEFINITION OF TERMS 5

CHAPTER 2 10

LITERATURE REVIEW 10

LEGISLATIVE INVOLVEMENT 10

RESEARCH-TO-PRACTICE GAP 13

TEACHERS' BELIEFS AND PERCEPTIONS 30

IMPLICATIONS FROM THE LITERATURE 33

CHAPTER 3 34

METHODS 34

DESIGN 34

PARTICIPANTS 37

INSTRUMENTATION 38

PROCEDURES 40

DATA ANALYSIS 41

CHAPTER 4 43

RESULTS 43

Demographics of the Participants 43

Quantitative Data Analysis 46

Qualitative Data Analysis 59

Summary 67

CHAPTER 5 68

DISCUSSION AND CONCLUSION 68

Special Educators' Rankings of HLPs in Instruction 68

Influences on HLPs 74

Sources for Information on Practices 77

Limitations 78

Implications for Practice 79

Recommendations for Future Research 82

Conclusion 83

REFERENCES 85

APPENDICES 101

APPENDIX A 102

APPENDIX C 108

APPENDIX D 109

APPENDIX E 110

LIST OF TABLES

TABLE 1 45

TABLE 2 47

TABLE 3 49

TABLE 4 50

TABLE 5 52

TABLE 6 54

TABLE 7 56

TABLE 8 57

TABLE 9 59

TABLE 10 67

CHAPTER 1

INTRODUCTION

The number of students with disabilities (SWD) being educated in inclusive settings is increasing, with an estimated 60 percent or greater spending 80% or more of their day in general education classrooms (Digest of Education Statistics, 2017). Their overall academic performance, however, remains less than desirable (Florian & Rouse, 2014). Researchers and educators agree the effectiveness of the teacher is the most important factor in predicting student outcomes (McLeskey, Maheady, Billingsley, Brownell, & Lewis, 2018; Windschitl, Thompson, Braaten, & Stroupe, 2012). They also agree that teachers have a large influence on their students' lives (Martin-Raugh, Reese, Tannenbaum, Steinberg, & Xu, 2016). The instructional choices the teacher makes has a direct impact on academic outcomes by SWD. In order for SWD to reach their full potential, it is important for teachers to choose the most effective instructional practices and incorporate them into their teaching on a daily basis (Torres, Farley, & Cook, 2012).

In an attempt to ensure teachers choose the most impactful instructional practices, researchers have identified a variety of evidence-based practices (EBPs) that have been proven effective in increasing academic achievement and behavior (Cook, Cook, & Landrum, 2013). By the time they are identified as having a disability, SWD are already achieving below grade level in one or more academic subjects and therefore require the most effective practices available in order to make progress. Yet, despite dissemination of EBPs through textbooks, government agencies, government grants, and professional development, the most effective instructional practices are all too often not used in classrooms. The end result is a gap between what is known to work according to research and what is being implemented in the classrooms. This is known as the research-to-practice gap.

There are numerous hypotheses for the research-to-practice gap and the lack of implementation of research-based interventions at the classroom level (Carnine, 1997; Cook & Odom, 2013; Grima-Farrell, Bain, & McDonagh, 2011). According to Carnine (1997), research may not be developed with the classroom or practitioner in mind. As a result, teachers find practices are not easily transferable to their classes and perceive practices to have limited classroom usability. Moreover, teachers often lack confidence in strategies and practices developed by researchers and do not trust the reported findings (Carnine, 1997). Some researchers feel that their research is not designed for practical use, rather "it is basic research with implications, not direct applications, for practice" (Carnine, 1997, p. 513). Teachers, however, do not have the time or nuanced knowledge to figure out how to use research inferences in their classrooms. They are interested in research that is explicit, with direct applications that are easy to implement and improve student learning (Landrum, Cook, Tankersley, & Fitzgerald, 2002).

Preservice teachers' limited exposure to research-based practices may be another contribution to the research-to-practice gap. That is, preservice teachers are not always explicitly taught in university courses to use research-based practices in the classrooms, and (Golder, Norwich, & Bayliss, 2005; McLeskey & Billingsley, 2008) much of what is taught in university courses does not easily transfer to the classroom (Korthagen, Kessels, Koster, Lagerwerf, & Wubbels, 2001; McLeskey & Billingsley, 2008). A change in teacher preparation programs has been recommended, with an increased emphasis on practice-based teacher education and centering teacher preparation in clinical settings.

Practice-based teacher education is a shift from more traditional programs and focuses on what teacher candidates know and can do rather than on theories that may no longer be relevant

to today's classroom. The general theme of practice-based teacher education is the concentration on a set of specific, well-defined practices (Forzani, 2014). The focus on practice emphasizes the value in providing teacher candidates with the experience of teaching, rather than the ambiguous theories of teaching (Peercy & Troyan, 2017).

Overhauling teacher preparation programs requires a move toward identifying specific practices that can be explicitly taught throughout the preservice teachers' time in university courses and implemented in field experiences. Other disciplines including elementary education, science, mathematics, foreign language, and reading have identified sets of high-leverage practices (HLPs) for teacher preparation programs to implement (Ball & Forzani, 2011). The intent of HLPs is to form the basis for teaching practices, developed to include strategies essential for the success of novice teachers as they enter their classrooms (Martin-Raugh et al., 2016).

The Council for Exceptional Children (CEC) established a work group to systematically identify a set of HLPs for special education teachers. The work group's purpose was to:

> Provide those involved in special education teacher preparation and professional development with a set of HLPs that were identified through consensus among special educators. These HLPs may be used to design a cohesive set of practice based opportunities to support teacher candidates and practicing teachers in learning to put this know-how to use on behalf of the complex learners they teach. (McLeskey, 2017, p. 11)

Explicitly teaching about and providing opportunities to practice HLPs within teacher preparation courses to cultivate teacher candidates' skillful use of HLPs would require teacher education programs to develop coursework and field experiences that focus on systematically prioritizing and attending to the candidates' acquisition of those practices (Brownell et al., 2019).

This could require a complete restructuring of many of the special education teacher preparation programs. Such a restructuring would come with multiple challenges, including contextual and content considerations as well as field experience considerations. Before embarking on such an arduous journey, it was important to first survey current special educators to investigate their knowledge, skills, and opportunities for implementation regarding the proposed HLPs.

Purpose of the Study

The purpose of this study was to investigate special education teachers' perceptions of CEC's HLPs, specifically to survey their knowledge, skills, and opportunities for practice. HLPs were defined as "practices that can be used to leverage student learning across different content areas, grade levels, and student abilities and disabilities" (McLeskey, 2017, p. 9).

Because of the recent establishment of HLPs in the field of special education, there is little research regarding teachers' perceptions of the HLPs, specifically in regards to their knowledge, skills, and opportunities for implementation. The HLP writing team sought feedback from stakeholder groups, including special education teachers. They also made efforts to consider the feedback from those teachers in developing the final draft of 22 practices (Alber-Morgan, Helton, Telesman, & Konrad, 2019). However, the working group considered the HLPs as a work in progress, and remained open to criticism and realistic assessment from the teachers who will use them, rather than a set of practices with no opportunity for input or further iterations (McLeskey et al., 2018). Therefore, results of the present study will contribute to the field with initial inquiries regarding special education teachers' perceptions, adding to the ongoing HLP collaborations between researchers and teachers and providing much needed feedback to the CEC HLP work group.

Research Questions

Specific research questions addressed were:

1. How do special education teachers perceive their knowledge of HLPs in instruction?
2. How do special education teachers perceive their skills in implementing HLPs in instruction?
3. How do special education teachers perceive their opportunities to implement HLPs in instruction?

A survey containing numerically rated and open-ended questions was administered to answer these questions.

Delimitations

This study specifically focused on the teachers' perceptions of their knowledge, skills, and opportunities for practice. One delimitation of this study is that the focus is only on the high-leverage practices in the instruction category, rather than the high-leverage practices in the areas of assessment, social/emotional/behavioral, and collaboration. Only participants from the state of Hawai'i were included in the study. Their responses were limited to a survey format with some open-ended prompts, where they self-reported their knowledge, skills, and opportunities for implementation of HLPs.

Definition of Terms

Council for Exceptional Children (CEC). According to their mission statement, CEC is "A professional association of educators dedicated to advancing the success of children with exceptionalities. We accomplish our mission through advocacy, standards, and professional development" (Council for Exceptional Children, 2019).

Education for All Handicapped Children Act (EAHCA). Passed in 1975, Public Law 94-142 or EAHCA was the first law to give SWD the right to a public education. This law mandated a free appropriate public education (FAPE) to all children including those with disabilities. It also specified that this education should be in the least restrictive environment (LRE) and that each child with a disability would have an Individualized Education Program (IEP).

Evidence-based practices (EBPs). Evidence-based practices are instructional practices that significantly improve student outcomes, and have been identified and designated as such by multiple rigorous research studies meeting specified guidelines for quality (Farley, Torres, Wailehua, & Cook, 2012). They are not a guaranteed solution for every student (Gallagher, 2004); however, when selected to align the practice to student characteristics, and delivered within a framework of effective instruction, they can eliminate some of the trial and error that teachers often go through when trying to find a practice or strategy that will work (Cook, Tankersley, Cook, & Landrum, 2008). In order to be classified as an EBP, a practice needs to have the support of multiple high quality research studies showing positive student outcomes as a result of the practice.

Free appropriate public education (FAPE). Prior to EAHCA becoming law, SWD were often denied public education. EAHCA provided federal funding to all states who guaranteed SWD would receive a free appropriate public education (Yell, Crockett, Shriner, & Rozalski, 2011).

High-leverage practices (HLPs). Practices used throughout grade levels and content areas as well as across student abilities to positively influence student learning. Definitions may vary slightly but researchers agree that HLPs include the following characteristics: (a) occur

often in teaching, (b) can be implemented easily by novice teachers, (c) are not difficult to master, (d) enable novice teachers to discover information about their students while learning more about teaching, (e) maintain the worthiness and intricacy of teaching, and (f) are based in research with the likelihood they will support student academic gains (Grossman, Hammerness, & McDonald, 2009).

Inclusion. Inclusion is the concept that it is the right of SWD to be placed in the general education classroom with nondisabled peers with that right being unconditional (Douvanis & Hulsey, 2002).

Individuals with Disabilities Education Act of 1990 (IDEA). The reauthorization of EAHCA included amendments that changed the name of the law to IDEA, changed the language to emphasize person first, expanded the categories of disabilities to include autism and traumatic brain injury, and required a transition plan for each SWD by sixteen years of age (Bradley, Katsiyannis, & Yell, 2011).

Individuals with Disabilities Education Improvement Act of 2004 (IDEA '04). The main goal of IDEA was to improve the academic outcomes for students with disabilities through highlighting the special education process and aligning the law to the No Child Left Behind (NCLB) requirements of adequate yearly progress (AYP), highly qualified special education teachers, and implementation of evidence-based practices (Yell, 2012).

Least restrictive environment. EAHCA mandated SWD be educated to the maximum extent with their nondisabled peers with the use of supplementary aids and services as needed (Douvanis & Hulsey, 2002).

Mainstreaming. Mainstreaming is the concept that implies SWD will be educated with their nondisabled peers when appropriate, which does not have to be exclusively in general education (Douvanis & Hulsey, 2002).

No Child Left Behind Act of 2001 (NCLB). Perhaps one of the most influential acts of legislation since 1965 when the Elementary and Secondary Education Act was originally passed, NCLB was designed to impact the academic achievement of the nation's 48 million students. It established a deadline of 2013-2014 for public schools to reach proficiency for their students in the areas of reading and math. Furthermore, it established an arduous system of accountability based on the performance of the students. NCLB also introduced requirements of highly qualified teachers and implementation of practices proven effective through scientific research (Yell, Shriner, & Katsiyannis, 2006).

Peer-reviewed research. In 2001, the President's Commission on Excellence in Special Education concluded that special education teachers generally do not teach using evidence-based practices and often rely on programs or practices that have not been proven to work, with the students paying the ultimate price. Under the Individuals with Disabilities Education Improvement Act (IDEIA), IEPs must have a statement of related services and supplementary aids and services. The services included must be based on peer-reviewed research when possible. Peer-reviewed research in special education refers to the use of rigorous and systematic science to examine and validate the strategy or instructional programs. Furthermore, all professional development and use of funds must be based on peer-reviewed and scientifically based research with a focus on improving student academic achievement (Yell et al., 2006).

Research-to-practice gap. The research-to-practice gap refers to the discrepancy between (a) findings of high quality research regarding which practices are and are not effective,

and (b) the actual practices implemented in schools and classrooms (Cook & Farley, 2019). Although the research-to-practice gap exists in many fields, it is particularly consequential in special education, as learners with and at risk for disabilities require highly effective instruction to achieve their goals and attain success in and out of school (Vaughn & Dammann, 2001).

Self-efficacy. Defined by Albert Bandura as "beliefs in one's capacity to organize and execute the courses of action required to produce given attainments" (1977, p. 3). Research regarding teachers and self-efficacy has found links between student achievement and self-efficacy judgements of students, teachers' beliefs in their own instructional efficacy, and teachers' beliefs about the efficacy of their school (Goddard, Hoy, & Hoy, 2004).

Students with disabilities (SWD). Students with disabilities in this study refers to those students who are eligible for special education services as defined by IDEIA and who have an IEP.

CHAPTER 2

LITERATURE REVIEW

Special educators are under increasing pressure from parents and administrators to increase positive outcomes for students with disabilities (SWD), yet have less time than ever before because of rising caseloads with subsequent paperwork requirements (Cancio, Albrecht, & Johns, 2013; Cancio et al., 2018; Prather-Jones, 2011). As a result, they are looking for practices that improve student outcomes but may be inclined to try popular quick-fix methods that are easy to implement because of their limited availability of time (Konrad, Criss, & Telesman, 2019). Despite federal directives and the increase in availability, the use of research-based practices to address the educational needs of students continues to be underutilized and achievement outcomes for SWD continue to be an issue (McLeskey et al., 2018). This chapter will further discuss legislative involvement, the research-to-practice gap, reasons for the gap, and efforts to narrow that gap, including evidence-based practices (EBPs) and the newly adopted high-leverage practices (HLPs). In addition, this chapter will discuss definitions and research support of HLPs in the area of instruction as well as special education teachers' perceptions of research-based practices.

Legislative Involvement

The last two decades have brought about significant changes for students with disabilities and those who educate them. As late as the early 1970s, only 20% of SWD in the United States were educated in public schools (Gerber, 2011). Many of these children were completely excluded from attending school. Some states actually had laws excluding certain categories of SWD from attending or receiving an education (Winzer, 1993). Many who did attend school did not receive an education that was appropriate for their individual needs. SWD were often "left to

fend for themselves in classrooms designed for education of their nonhandicapped peers" according to Chief Justice Rehnquist (Board of Educ. v. Rowley, 458 U.S. 176,1982, p. 191). Prior to 1975, education for SWD was viewed as a privilege, not as a right.

The least restrictive environment (LRE) mandate began in 1975 with Public Law 94-142, the Education of All Handicapped Children's Act (EAHCA), requiring that students with disabilities (SWD) be educated with their peers without disabilities to the maximum extent possible and appropriate. EAHCA also established FAPE, free appropriate public education for all SWD (Yell, Crockett, Shriner, & Rozalski, 2011). Furthermore, it mandated that SWD should be removed from the same setting as their peers only if they could not be satisfactorily educated in those general education settings with the use of aides and services. However, SWD were often taught in segregated classrooms and were not always exposed to grade level curriculum despite the LRE mandate. In 1998 the Office of Special Education Programs of the U.S. Department of Education recognized the importance of research-based practices and categorized it as an area in need of major exploration (Bradley et al., 2011).

Legislation in 2001, known as No Child Left Behind (NCLB), altered the federal governments' involvement in public education and more SWD began to transition from special education classrooms into general education classrooms. NCLB required every public school student to be brought up to state standards in the areas of math and reading (Yell, 2012). The law was intended to reform schools through accountability with the overall goal of improving student achievement (Kauffman & Hallahan, 2011). Instructional decisions justified by research were also stressed, with scientifically based research mentioned 110 times, defined as "rigorous, systematic and objective procedures to obtain valid knowledge" (U.S. Congress, 2001).

NCLB opened up access to the general education curriculum for children with disabilities, resulting in changes to the structure and mindset of both special education and general education regarding the education of students with disabilities. New requirements impacted general education and special education teacher preparation programs. The increase in inclusive services blurred the lines of responsibility between general education and special education teachers, making it progressively more difficult to separate the fields of teacher preparation, and increasingly more important to prepare teachers who were equipped to teach students of varying and diverse abilities. The original emphasis of NCLB was to ensure access, but that evolved into ensuring improved outcomes for SWD through the classroom use of research-based practices (Yell & Rozalski, 2013).

NCLB ensured that SWD would be educated with their nondisabled peers with access to grade level curriculum and sparked the movement of basing educational practice on sound scientific evidence such as EBPs (Cook, Tankersley, & Landrum, 2009). In addition to NCLB, IDEA ’04 also required special educators use educational research and brought about one of the most significant changes for special education teachers, which was the requirement that peer-reviewed research be used as a basis for instructional decisions. The law mandated that services provided to SWD be based on reliable evidence that had been published in a peer-reviewed journal or approved by experts, to the extent practicable (Yell & Rozalski, 2013). NCLB was replaced by Every Student Succeeds Act (ESSA) of 2015 and includes at least fifty references to the term “evidence-based.” The intent behind these legal mandates was to improve the quality of education for all students (Sciuchetti, McKenna, & Flower, 2016). In addition to the federal mandates, standards for education and teacher training (e.g., the National Council for Accreditation of Teacher Education, the National Board of Professional Teaching Standards, the

Council for Exceptional Children) reference using research when teachers choose or adapt materials and instruction. Regardless of the intent by those who created the policies, or the emphasis by professional guidelines for teachers to use research in their daily instructional decisions, there remains an overall lack of teacher awareness regarding EBPs (Sciuchetti et al., 2016).

Research-to-Practice Gap

Scientific research is commonly accepted as the best means for selecting practices that lead to improved student outcomes (Odom et al., 2005); yet, EBP research continues to have little impact on practice (Glasgow, Lichtenstein, & Marcus, 2003; Sindelar, Shearer, Yendol-Hoppey, & Liebert, 2006; Vaughn, Klingner, & Hughes, 2000). The passage of NCLB and ESSA helped ensure school districts would be held accountable when SWD failed to make academic gains, but also brought to light the existence of the research-to-practice gap (Cook & Smith, 2012). Despite federal mandates for teachers to use research to guide their practice, the research-to-practice gap remains a continuing concern (Burns & Ysseldyke, 2009; Gable, Tonelson, Sheth, Wilson, & Park, 2012; Sciuchetti et al., 2016), with little to indicate that the gap has narrowed (Cook & Odom, 2013).

The research-to-practice gap refers to the discrepancy between (a) findings of high quality research regarding which practices are and are not effective, and (b) the actual practices implemented in schools and classrooms (Cook & Farley, 2019). The practices that are known to work according to high quality research are not always the practices implemented in the classroom. This research-to-practice gap is particularly consequential in special education, because learners with disabilities and those at risk for failure require highly effective instruction to achieve their goals and attain success in and out of school (Vaughn & Dammann, 2001).

Reasons for the gap. There has been much written on potential reasons for the research-to-practice gap, including whether teachers feel the research is usable and accessible as well as the ongoing debate between researchers and teachers. The following section discusses these issues in more detail.

Increasing implementation of EBPs by special education teachers, consequently narrowing the research-to-practice gap has proven difficult. Teachers, overall, tend to lean on their peers and colleagues around them for advice on which strategies to use, rating professional journals and university course work as less trustworthy and less useable than their fellow teachers (Landrum et al., 2002). Researchers do not always consider the classroom implications when conducting their studies, so special educators do not feel the studies are applicable to the needs of their specific students in their specific settings. They do not see the research as transferable to their classrooms. Other reasons special educators give for not using research to guide instructional decisions include what they felt were, "little attention to practitioner needs, inaccessibility of research findings, and the lack of feasibility in implementing practices that are seldom designed for use in real-world settings" (Jones, 2009, p. 101).

Carnine (2000) linked education to other sciences, providing a brief historical background on the fight to implement research-based practices in education. Of importance from his research was *Project Follow Through*, a large-scale longitudinal study using more than twenty different approaches to teach economically disadvantaged K-3 students. More than 70,000 students in more than 180 schools participated in the study. Participants' achievement at national or near national norms only occurred when Direct Instruction (DI) was used. All other approaches resulted in participants performing at a lower level, often worse than the control group. Such a large study should have resulted in an implementation of DI throughout the field.

Instead, critiques of *Project Follow Through* were published by the Ford Foundation as well as the federal government's National Institute of Education. Suggestions were made for follow up studies to be conducted because,

> The audience for Follow Through evaluations is an audience of teachers that doesn't need statistical finding of experiments to decide how best to teach children. They decide such matters on the basis of complicated public and private understandings, beliefs, motives, and wishes. (Carnine, 2000, p. 8)

The critiques were in direct opposition to using research in making instructional decisions. As a result, Carnine insisted the field of education needed to follow examples set by other professions, such as medicine, pharmacology, accounting, and others that have advanced into mature professions, or education would remain in its current state as an "immature profession, one that lacks a solid scientific base and has less respect for evidence than for opinion and ideology" (2000, p. 8).

Burns and Ysseldyke (2009) conducted a study of 174 special education teachers and 333 school psychologists and found that ineffective practices were implemented with the same rate of occurrence as those backed by research. Results of this study indicated that although educators reported implementing some practices grounded in science, "teachers are more likely to select untried interventions that are consistent with their theoretical orientations" (Burns & Ysseldyke, 2009, p. 8). Burns and Ysseldyke (2009) noted the importance of studying information from teachers about their practices, because success of restructuring or improvement is dependent upon the beliefs, attitudes, and behaviors of those who will be changing. One reason teachers are more likely to implement practices with little empirical support is that teachers generally do not trust the quality of the research findings. Trustworthiness involves the level of confidence

educators can put in the research findings. Usability and accessibility are also concerns of teachers (Boardman, Arguelles, Vaughn, Hughes, & Klingner, 2005; Carnine, 1997; Landrum et al., 2002). Usability involves the research-based practice's ease of application. Some practices, such as modeling and mnemonics, can be easily implemented with fidelity, regardless of experience level. Other practices, such as Self-Regulated Strategy Development (SRSD) require more time to master. Accessibility involves the ease to which educators can access research findings (Carnine, 1997). For a research-based practice to be accessible, it needs to be available and easy to understand. Special educators need to be able to locate information about a research-based practice and understand how to implement it in their classrooms with minimal time invested (Landrum et al., 2002). Usability of a practice could result in sustained classroom application when educators believe they can apply techniques backed by research with their students. If educators do not believe or cannot easily imagine applying the techniques in their classroom, odds are great they will not implement them, regardless of the amount of research showing them effective (Landrum, Cook, Tankersley, & Fitzgerald, 2007).

Boardman et al. (2005) conducted eight two-hour focus group interviews in four different schools to investigate special education teachers' viewpoints regarding the usefulness of research findings. Their results indicated educators looked for practices that were appropriate, feasible, included materials as well as professional development, and had the capability to be individualized. Many chose practices based on their own judgements. Research was not an important condition. Educators did not feel compelled to implement any particular methods or practices although several did state that practices that are research-based should be considered. Special education teachers who had previous knowledge of research felt it did not apply to their population of students and stated, "they were neither obligated to nor impressed by the current

push to use research-based practices in their classrooms" (2005, p. 177). They would not be swayed to join the research movement unless their own basic needs, such as accessibility to programs and materials, were met.

The ongoing debate between researchers and educators does little to narrow the gap. Educators seem to be suspicious of research, perhaps as a direct result of the continual change of policies sent down from school districts and state departments (Boardman et al., 2005). All too often, the words "research-based" are used to describe a practice grounded in ideology or opinion, not rigorous research. This confusion does little to bring researchers and educators together. In addition, EBPs can exemplify effective practices that are shown to work in model settings instead of the typical conditions found in most classrooms (Dijkers, 2011). As a result, special education research knowledge is not often included in the classroom.

Bridging the gap. Efforts to bridge the research-to-practice gap have primarily centered around both identification and dissemination of EBPs. There have been multiple websites developed to increase the use of EBPs, such as What Works Clearinghouse, Best Evidence Encyclopedia, and The National Professional Development Center on Autism Spectrum Disorder. There have also been specific EBP modules created by the IRIS Center, a national center developed to help improve outcomes for SWD through the use of EBPs and interventions. More recently, there has been a shift toward changing teacher preparation programs and ensuring teachers leave the programs with the knowledge and skills to implement a set of HLPs. Whereas the HLPs are not always EBPs, each HLP is grounded in research and designed to work in conjunction with EBPs (McLeskey, 2019). While some EBPs can be easily accessed and require little effort to use appropriately, many others are available as a packaged program that requires extensive training and investment by the school. Such EBPs are not as easily accessible and

require a time commitment beyond what teachers are able to give. The following section will discuss EBPs and HLPs in detail.

Evidence-based practices. In an attempt to help close the research-to-practice gap, there has been considerable discussion and substantial research on EBPs. Evidence-based practices are instructional practices proven by reliable research to be effective when implemented with fidelity. They have the potential to assist in narrowing the research-to-practice gap while improving student achievement (Cook & Cook, 2011). Although they may not work with every student, the odds are much greater that desired student outcomes are going to be achieved when EBPs are utilized in the classroom. Specifically, EBPs are supported as effective by a number of methodologically sound research studies that indicates a practice has meaningful effects on a particular outcome (e.g., reading comprehension) for a target group of students (e.g., students with learning disabilities).

Evidence-based interventions began in the field of medicine in the 1970s, later transferring to other disciplines. Psychology originally termed the concept *empirically validated treatment*, which later changed to *empirically supported treatment* (Mesibov & Shea, 2010). Other major organizations who adopted similar approaches to identification of evidence-based practices or interventions include the American Psychological Association, the American Speech and Language Association, Institute for Education Science, and the National Autism Center (Spencer, Detrich, & Slocum, 2012). The purpose of the EBP movement across these disciplines is to identify and disseminate information about what practices are supported as effective by methodologically sound research in order to increase targeted outcomes. Overall, the concept of EBPs has been acknowledged and recognized by researchers in the field of special education (Cook & Odom, 2013), and the resulting research-to-practice gap transitioned from a concern by

a small group of educational researchers into national policy (i.e., the No Child Left Behind Act of 2001's use of "scientifically based research") (Cook & Odom, 2013). Basing educational decisions on scientific evidence moved from a good concept into law (Spencer et al., 2012). The EBP movement in the field of special education evolved into developing a definition by leading researchers. The Council for Exceptional Children supported these researchers in identifying quality indicators for determining if a practice is evidence based, and how these practices were implemented. However, despite all of the efforts focused on decreasing the research-to-practice gap by increasing the EBPs implemented in the classrooms, there has been scarce consideration given to the perspective of special educators and school district personnel (Greenway, McCollow, Hudson, Peck, & Davis, 2013). High-leverage practices might provide the clarity needed regarding effective instruction, allowing special educators to discern accessible and useable strategies that can be implemented as soon as they enter the classroom (Billingsley, Bettini, & Jones, 2019).

High-leverage practices. In contrast to EBPs that could possibly be cost prohibitive or involve complex components, HLPs are a set of practices that teachers can implement without purchasing special materials or without participating in extensive strategy-specific training. Recently, there has been a push toward revitalizing or shifting teacher preparation programs away from theory toward a set of "core" or "high-leverage" practices as the primary curriculum. The idea behind this shift involves preparing novice teachers to implement this set of core practices and allowing for multiple opportunities in field based settings in which to do so (Kang & Zinger, 2019).

In 2010, the National Council for Accreditation of Teacher Education (NCATE, 2010) published a highly influential document titled *Transforming Teacher Education Through*

Clinical Practice: A National Strategy to Prepare Effective Teachers. That report suggested that teacher preparation programs move away from the status quo of the loosely connected, often segregated connection between academic preparation and fieldwork and develop programs fully integrated, which are grounded in fieldwork and intertwined with academic coursework. New accreditation standards for teacher preparation programs now place more emphasis on clinical practice that is of high quality and effective. These accreditation changes are the result of dialogues occurring among teacher educators regarding improvements necessary in teacher preparation programs. Because student learning is reliant on what takes place in the classroom, teacher preparation programs should center on ensuring that preservice teachers are specifically prepared for the work they will do as teachers in the classrooms (McLeskey & Brownell, 2015). However, there are concerns among teacher educators that teacher education is not accomplishing that goal. One such concern is that university preparation is not always generalizable to the classroom. Much of the course work involves theory, reflection, and investigation instead of practice teaching (McLeskey, Billingsley, Brownell, Maheady, & Lewis, 2019). Another concern is the lack of integration between course work and field work. Despite the agreement among teacher educators that integration is necessary to support teacher candidates in associating what they learn with instructional decisions in the field, little progress has been made in increasing integration (Forzani, 2014). According to Grossman and McDonald, "University-based teacher educators leave the development of pedagogical skill and the interactive aspects of teaching almost entirely to field experiences, the component of professional education over which we have the least control" (2008, p. 189). A third concern is the lack of professional curriculum for teacher education, which leaves what the teacher candidates actually learn largely to chance (McLeskey et al., 2018). What occurs in field settings

are not identified or systematically taught because of a lack of alignment between courses and field experiences. Finally, teaching is complex work and teacher candidates are not always taught ways to skillfully implement effective teaching practices (McLeskey, 2018).

Because of the aforementioned concerns, teacher preparation programs are undergoing a shift from teaching about the theories behind the concepts of teaching, which can be ambiguous, toward purposefully identifying a core collection of practices upon which teacher education can be built (Brownell et al., 2019). This idea of systematically preparing teachers centers around a fundamental collection of practices. This collection of practices, or HLPs, can be defined as "practices that are essential to effective teaching and fundamental to supporting student learning" (McLeskey et al., 2018), and are being identified by multiple education disciplines, to include elementary education, mathematics, science, foreign language, and special education.

In 2014, the Council for Exceptional Children's (CEC) Board of Directors accepted a proposal to develop a set of HLPs for special education. The project was proposed by the Professional Standards and Practice Committee (PSPC) and supported by the Collaboration for Effective Educator Development, Accountability, and Reform (CEEDAR) Center, which is funded by the U.S. Department of Education's Office of Special Education programs. Participants of the HLP team included representatives from PSPC, CEC's Teacher Education Division, CEEDAR, CEC Staff, and the Council for Chief State School Officers (McLeskey, 2017). Figure 1 outlines the development of the HLPs in special education. In July 2016, 22 HLPs were approved by the CEC Board and a report with extensive descriptions of the practices with research and policy support was published by the writing team.

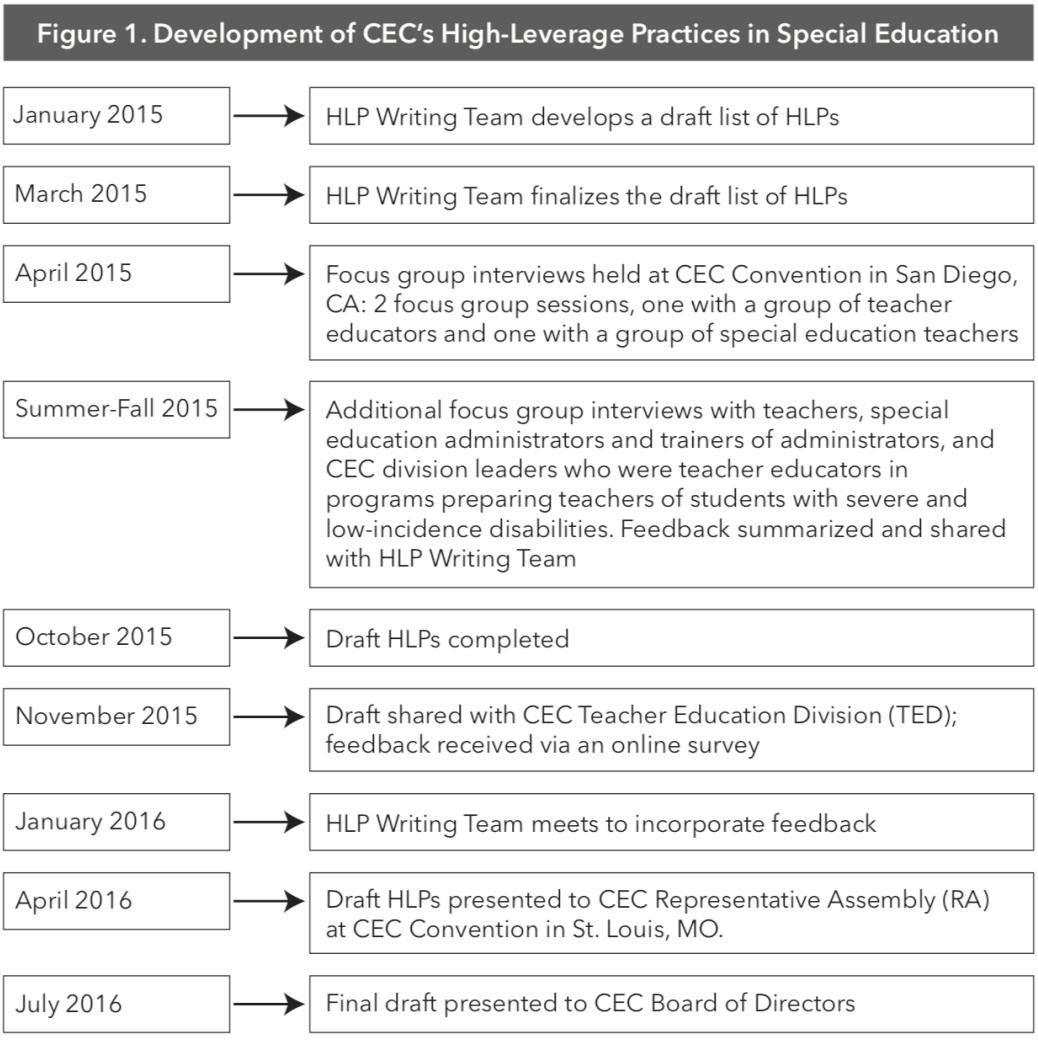

Figure 1. Timeline for the development of HLPs. Reprinted from *High-leverage practices in special education*, by McLeskey et al., p. 2. Copyright 2017 by Council for Exceptional Children & CEEDAR Center.

HLPs, definitions and research support. To be effective when teaching students with disabilities, special educators need to be knowledgeable not only about general education curricula and standards, they also need to be knowledgeable about research-based practices. They need to understand how to develop lessons based on Individualized Education Plan (IEP) goals and benchmarks while understanding how to use data and progress monitoring to evaluate student progress and evaluate their instructional effectiveness (McLeskey, 2017). The HLP

writing team went through an iterative process to identify, solicit feedback, and prioritize teaching skills for special educators. By soliciting feedback from an initial group of special educators, the writing team helped initiate investment in the HLPs, an issue that has historically plagued the implementation of EBPs. The final list of HLPs was eventually narrowed down by answering the following question, "What are essential practices of effective special educators?" (Sayeski, 2018, p.169). Twenty-two HLPs were identified, divided into the four categories of collaboration, assessment, social/emotional/behavioral, and instruction. In this section, the HLPs for instruction are defined with a brief summary of supporting research that justifies the effectiveness of the practice.

1. *Identify and prioritize long- and short-term learning goals*. Instruction for all students, especially for students with disabilities, should be driven by long- and short-term goals that are prioritized for each individual student. Common Core State Standards and individualized education plans determine the focus of the goals so students receive instruction that is based on their specific strengths and needs while working toward the same rigorous expectations as the other students without disabilities (McLeskey, 2017). Out-of-level instruction may be necessary for some students and effective special educators need to have the skills and knowledge to prioritize students' goals around critical content while taking present levels of performance into consideration (Fuchs et al., 2015).

2. *Systematically design instruction toward a specific learning goal.* Systematic, logical, and carefully designed instruction is crucial for students with disabilities. Explicit connections across content and lessons are made by effective special educators who teach less complex skills and prerequisites before higher level knowledge is taught (Hattie,

2008). Teachers need to have the ability to develop instruction that will guide students as they meet challenging yet reachable learning goals. Those learning goals need to be stated in clear, concise, measurable terms (McLeskey, 2017). Findings from meta-analyses on learning goals showed that there is an increase in achievement for students with and without disabilities when the goals set by teachers are specific and challenging rather than "do your best." There is also an increase in achievement when learning activities are designed so students can attain set goals (Hattie, 2008).

3. *Adapt curriculum tasks and materials for specific learning goals*. Effective special educators regularly adjust resources and assignments in order to better facilitate learning for students with disabilities (Alber-Morgan et al., 2019). In addition to adjusting resources and assignments, they use strategies to supplement the content to increase access for students with disabilities. This is done in a number of ways, including, but not limited to, graphic organizers, guided notes, and mnemonics (Deshler et al., 2001). Numerous studies have found that these types of content enhancers improve performance for students with disabilities. Although it is difficult to assess the potential for content enhancers as a whole to increase student performance, graphic organizers, guided notes, and mnemonics, when used in isolation, have been shown effective in improving academic outcomes (McLeskey, 2017).

4. *Teach cognitive and metacognitive strategies to support learning and independence*. Ideally, students with disabilities will eventually learn to be self-directed, strategic learners, but much support must be given for them to reach this goal. They essentially need to be taught how to learn. Effective special educators teach their students cognitive and metacognitive strategies that can be used across content, settings, and levels.

Multiple studies have shown strategy instruction as effective in aiding students with disabilities become more self-sufficient as learners (Baker, Chard, Ketterlin-Geller, Apichatabutra, & Doabler, 2009). Content areas in which strategy instruction was found effective include mathematics, science, reading comprehension, and writing (McLeskey et al., 2018).

5. *Provide scaffolded supports*. Scaffolded supports are designed to be temporary, providing assistance until the student has become skilled enough in the task to do it without assistance. Scaffolds may be given in many different forms and can be either preplanned or spontaneously used. As the student becomes more skilled in the task, the scaffolds are removed and there is a gradual release of responsibility into independence. While scaffolded supports have not been independently studied, there have been studies on scaffolded supports as part of an instructional package involving multiple factors. For example, reciprocal teaching, collaborative strategic reading, and SRSD have been shown to be effective and contain scaffolded supports (McLeskey et al., 2018).

6. *Use explicit instruction.* Explicit instruction is a specific way of teaching that increases academic learning time and provides appropriate support to students with disabilities as they engage in the lesson. It incorporates review, presenting new content in small steps, using guided practice, providing corrective feedback, providing independent practice, and cumulative reviews (Riccomini, Morano, & Hughes, 2017). Support for the use of explicit instruction has been provided through multiple studies (Archer & Hughes, 2011; Hughes, Morris, Therrien, & Benson, 2017) from a variety of content areas, including reading, and cognitive science. In addition, it has been successful when used while

teaching students who have been struggling with writing conventions and math skills and concepts.

7. *Use flexible grouping.* Flexible grouping may include small heterogeneous and homogeneous groups, pairs, whole-class, and individual instruction. Arrangements take into consideration lesson goals and objectives as well as learning differences, student skills, prior knowledge, interest, and a variety of other factors (Hoffman, 2002). Although it is difficult to report on the effectiveness of flexible grouping as a whole because of the variety of instructional arrangements possible, there have been numerous research studies conducted on homogeneous grouping (Coyne, Kame'enui, & Simmons, 2004; Gersten et al., 2009; Taylor, Pearson, Clark, & Walpole, 2000) and heterogeneous grouping (Hattie, 2008; Johnson, Johnson, & Maruyama, 1983). Evidence from those studies suggest academic and interpersonal student outcomes show improvement when grouping is well designed and appropriately implemented.

8. *Use strategies to promote active student engagement.* The correlation between high student engagement and academic achievement is well established and accepted in the field of educational research (Twyman & Heward, 2018). High student engagement results in not only higher achievement but also in lower reports of off-task and inappropriate behavior. Furthermore, high student engagement fosters a value and interest in education and facilitates students in developing autonomy. Student engagement has been found to be a strong indicator of academic performance. It relies on positive student-teacher connections and a class climate that cultivates community. Positive teacher-student relationships have been found to have a positive effect on student achievement (Twyman & Heward, 2018).

9. *Use assistive and instructional technologies.* Technology is a large factor in the lives of students with disabilities. As such, the 1997 reauthorization of IDEA required IEP team members to consider the possibility that the student for whom the IEP is being developed may require assistive technology devices and services. Technology can be either assistive or instructional. Assistive technology (AT) can range from something as simple as pencil grips to complex augmentative communication devices that provide the ability to speak for students who are unable to do so physically. Instructional technologies provide assistance with learning and engagement. Effective special educators often use a combination of assistive and instructional technologies to adequately address students' individual learning needs (McLeskey, 2017).

Technology is one area in which research has difficulty keeping up with all of the advances. However, there have been studies that show the positive effects technology has on students' learning. For example, computer-aided instruction has been found to improve the cognitive skills of students with low incidence disabilities (Weng, Maeda, & Bouck, 2014). A meta-analysis of single case studies showed that technology-based augmentative and alternative communication systems have strong effects for communication skills, social skills, academics, and challenging behaviors (Ganz et al., 2012).

10. *Provide intensive instruction.* Intensive instruction generally occurs as a third-tier support in a multi-tier support or responsiveness-to-intervention system and is designed for students who have not responded to the secondary supplemental instruction tier. Intensive instruction includes individualized, data driven instruction that increases in intensity based on each unique student's needs (Fuchs, Fuchs, & Malone, 2017). Through

the process of data based individualization, special education teachers start with an intervention and use ongoing progress monitoring to adapt the intervention based on the student's performance. Intensive intervention is intended for students who have not responded to previous evidence-based instruction or supplemental intervention and who have the most severe and pervasive learning needs (McLeskey, 2017). Intensive intervention includes increasing instructional time and decreasing group size or providing one-to-one instruction. The effect of doing so should increase opportunities to respond and receive feedback, both shown to increase progress for students with and without learning disabilities who had not previously responded adequately to instruction at the secondary-tier of support (Hattie, 2008; Hattie & Timperley, 2007).

11. *Teach students to maintain and generalize new learning across time and settings.* Generalization and maintenance of skills freshly learned is problematic for students with disabilities. When a newly acquired skill is generalized, the student can perform that skill across a variety of environments different from the one in which the teaching occurred. Maintenance occurs when the student can continue to perform newly acquired skills without any accompanying instruction. Strategies for maintenance and generalization may include varying the instructors, changing the instructions or settings, schedules of reinforcement, or systematic reviews of the material. The strategies for maintenance and generalization should be carefully and proactively chosen by the special educator (McLeskey, 2017). Multiple studies have assessed the effectiveness of generalization increased with specific programming developed for that purpose (Stokes & Baer, 1977). Generalization and maintenance strategies have been used successfully for mathematics, oral reading fluency, and writing interventions (McLeskey, 2017).

12. *Provide positive and constructive feedback* to guide students' learning and behavior. Instructional feedback is given for the purpose of guiding students' learning while increasing their engagement, motivation, and independence. Increasing those skills results in improved academic achievement. For feedback to be effective, it should be meaningful and specific, timely, sincere, suitable for the grade, and concise. Feedback should be developed for providing information regarding performance rather than as an external reward (Hattie & Timperley, 2007). Research has shown that improved learning occurs when effective feedback is used for the purpose of guiding the students' learning and to increase their motivation and engagement (Thurlings, Vermeulen, Bastiaens, & Stijnen, 2013). Hattie (2008) found that feedback is one of the most influential forces on student achievement and that educational achievement is improved when it is used effectively and reliably.

HLPs show great promise in providing an infrastructure for transforming special education teacher preparation into programs that support multiple opportunities to practice implementing a core set of practices. Graduates from these programs have the potential to be novice teachers with a toolkit of practices, based in research, and generalizable across a variety of settings. However, for change to occur, special education teachers' perceptions regarding the HLPs must first be studied because they will be the ones who will be asked to implement those HLPs in their classrooms.

HLPs and EBPs, working together. HLPs and EBPs can be used together to become a very effective tool as teachers work to improve student outcomes. HLPs are vital for providing an infrastructure for supporting effective teaching at all levels of instruction while EBPs allow teachers to drill down more specifically when teaching a skill. For example, a teacher might use

flexible grouping, which is a HLP, to specifically provide vocabulary instruction, which is an EBP, followed by choral reading a portion of the text, another EBP (McCray, Kamman, Brownell, & Robinson, 2017).

The best method for improving outcomes for SWD is to improve the effectiveness of their teachers. The impact teachers make on student gains is greater than any other school influence. Removing the ambiguity and systematically redesigning teacher preparation programs may be one way to narrow the research-to-practice gap and increase the effectiveness of special educators. In order to do so, the focus of teacher preparation programs may need to shift from ungeneralizable and ambiguous concepts to explicitly preparing teacher candidates to use specific, effective, research-based instructional practices and strategies in the classroom.

Teachers' Beliefs and Perceptions

The amount of time spent investigating the research-to-practice gap is irrelevant if the beliefs and behaviors of teachers have not been addressed. The success of any reform movement is highly dependent upon the understanding of the participants' beliefs and behaviors (Pajares, 1992). However, studying beliefs can be difficult, which is why many researchers steer clear of the topic (Pajares, 1992). According to Pajares, beliefs and perceptions, when properly understood, may be "the single most important construct in education research" (1992, p. 329). In addition, improvement in practice will only occur when teachers alter their routines and implement practices that address students' academic needs and goals, yet changing instructional routines and implementing new practices have been shown to be difficult for some special education teachers (Gersten, Vaughn, Deshler, & Schiller, 1997).

Gersten, Chard, and Baker conducted a thorough literature review on sustainability of research-based practices (2000). They discovered important issues relating to teachers'

perceptions and beliefs, one of the most crucial being that changes in teachers' beliefs and perceptions often occur after changes in practice. If a teacher deemed a practice effective and capable of producing desired results with their students, the practice continued to be implemented. Of particular interest to those teachers with at risk students was the finding that sustainability occurred when teachers felt the practice helped their difficult-to-teach students. The study found that teachers' self-efficacy or their own perceptions of their teaching skills is important to take into consideration with sustainability of research-based practices. They also found that teachers are not always informed or aware of the knowledge base that exists on research-based practices, but that teachers are eager to learn about practices that are feasible, sustainable, and effective for all students (Gersten et al., 2000).

Gable, Tonelson, Sheth, Wilson, and Park (2012) surveyed over 1500 general educators and 1400 special educators who taught students with emotional behavioral disorders (EBD). They listed 20 research-based practices and asked teachers to rate the frequency that they used each. Some research-based practices included peer-assisted learning strategies (PALS), choice making opportunities, self-monitoring, clear rules/expectations, academic supports and curricular modifications, and peer-mediated intervention. Respondents reported that they were prepared or well-prepared to use only two of the practices, (a) clear rules/expectations and (b) academic supports and curricular modifications. Most general education teachers reported that they rarely give choice-making opportunities nor did special education or general education teachers report using individual research-based practices such as peer-mediated intervention, conflict resolution, or PALS. Furthermore, the study showed that few of the teachers of students with Emotional Disturbances (ED) used strategies that are most likely to produce positive results (Gable et al., 2012).

Mazzotti and Plotner (2016) surveyed 592 transition-service providers in the southeastern and midwestern United States. Included on the survey were questions regarding their training in research-based practices as well as their use of research-based practices in the area of secondary transition. Participants reported low to moderate support and training for implementing research-based practices (e.g., 56% of respondents disagreed or strongly disagreed that their professional development opportunities fully prepared them to implement research-based practices). Results for implementing research-based practices were mixed. Respondents indicated moderate use of some targeted practices (e.g., 64% and 62% reported using self-management strategies and visual displays for academic instruction always or often, respectively), but seldom implemented other research-based practices (62% reported never using *Whose Future is it Anyway* in transition planning, and 51% reported never using training modules to facilitate parental involvement). Data were not collected on use of ineffective practices.

Finally, a group of researchers (Cooper et al., 2018) surveyed 248 educators regarding training, use, and perceived effectiveness of 37 research-based classroom management practices. Some of the classroom management practices included classroom rules/expectations, opportunities to respond, present choices, classwide peer tutoring, social skills instruction, direct instruction, guided notes, token economies, classwide group contingencies, self-monitoring, and self-evaluation/goal setting. The majority of participants indicated they used most of the practices with effective results. However, a large group of educators reported not using some of the research-based practices. For example, 64.6%, 49.8%, and 31.8% of respondents indicated that they did not use reinforcement, self-reinforcement, or function-based interventions, respectively.

Implications from the Literature

Although education reform is a slow and ongoing process, review of the current literature indicates that teachers want what is best for their students and may be willing to consider implementation of practices and strategies that are research-based. The most important influencers on special educators' instructional decisions are the individual needs of their students and the impact on student learning. These factors are more important than any pressure or attempt to persuade them to use certain methods, even if those methods are backed by scientific evidence (Boardman et al., 2005).

The literature also indicated there is still a lack of research-based practices used in special education classrooms. The recent push by CEC to improve teacher preparation programs so that they systematically and explicitly prepare teacher candidates to use a designated group of HLPs may help increase the implementation of effective practices and strategies. However, very little research was found regarding special educators' perceptions of those HLPs. To address the lack of knowledge regarding this area, this study surveyed special educators to learn more about their knowledge, perceived skills, and opportunities to practice HLPs in the area of instruction.

CHAPTER 3

METHODS

The previous chapters provided a discussion of high-leverage practices and the purpose behind their use in teacher preparation programs to guide instruction of future special educators. To date, no published research has investigated the perceptions of high-leverage practices by in-service special educators or the impact of high-leverage practices on strategy selection or instructional choice by in-service special educators. The purpose of this chapter is to provide justification and description of the selected research design and discuss the methodological elements of the study.

This dissertation study investigated how participating in-service special education teachers in Hawai'i felt about the newly proposed HLPs by answering the following research questions:

1. How do special education teachers perceive their knowledge of HLPs in instruction?
2. How do special education teachers perceive their skills in implementing HLPs in instruction?
3. How do special education teachers perceive their opportunities to implement HLPs in instruction?

Design

This descriptive research used a concurrent mixed methods design to investigate the research questions (Creswell, 2014). Descriptive research is used to describe things as they exist rather than looking for a relational or causal existence. Descriptive data can create an important foundation for empirical research as well as provide important information for special educators (Cook & Cook, 2016).

Creswell defined mixed methods as, “An approach to research in the social, behavioral, and health sciences in which the investigator gathers both quantitative (close-ended) and qualitative (open-ended) data, integrates the two, and then draws interpretations based on the combined strengths of both sets of data to understand research problems” (2014, p. 2). The core assumption of the mixed methods approach to research is that the collective strength that comes from combining statistical data with stories provides a more thorough understanding of the research than either source of information alone can provide (Creswell, 2003).

Mixed methods research utilizes the strengths of both qualitative and quantitative research and has increased in popularity in the last 20 years, especially in the areas of social and health science research (Creswell & Clark, 2017). Combining both research methods allows for more insight into the topic than using either type of research independent of the other and the results can be quite powerful when presented using both summary data and descriptive discussion (Creswell, 2014).

Historically, quantitative and qualitative researchers were independent from one another, and researched in isolation (Tashakkori, Teddlie, & Teddlie, 1998). This was primarily because quantitative and qualitative researchers assumed different theoretical frameworks. Quantitative researchers tended towards an objective view of reality whereas qualitative researchers emphasized more subjective realities. Initially, combining the two methods created issues concerning the validity of the research until researchers began to realize that the two methods complement each other when researching educational problems (Creswell & Clark, 2017). Mixed methods researchers tend to adopt a pragmatism perspective. Pragmatists are focused on the problem and thus use pluralistic approaches to learn about the problem. They are not committed to any one system of philosophy and draw from both qualitative and quantitative

assumptions in their research. They are free to choose whatever methods and techniques will best help them understand the problem. Pragmatism opens the door for researchers to look at multiple methods and different viewpoints as they collect data and analyze the results (Creswell, 2003).

More than 20 years ago, Newman and Benz discussed putting an end to the separation of qualitative and quantitative behavioral research, exploring the idea of a qualitative-quantitative research continuum, rather than a dichotomy (1998). They suggested that a continuum was the only construct that fit with their belief that all behavioral research consists of a combination of both qualitative and quantitative constructs (Newman & Benz, 1998). Shortly thereafter, Tashakkori and Teddlie published the *Handbook of Mixed Methods in the Social & Behavior Sciences*, the first comprehensive overview of mixed methods (2003). Since then, several journals have been created that center around the topic of mixed methods research, including the *Journal of Mixed Methods Research*, *Quality and Quantity*, and *Field Methods* (Creswell, 2003).

Mixed methods research has certain characteristics. The research questions lend themselves to both qualitative and quantitative data. Quantitative data and qualitative data are both collected, although one may be emphasized over the other. The sequence for collecting the qualitative and quantitative data is determined, with either one being collected first or both collected simultaneously (Lodico, Spaulding, & Voegtle, 2010).

The mixed method concurrent embedded strategy design consists of simultaneously collecting both quantitative and qualitative data during one data collection phase (Creswell, 2014; Creswell & Clark, 2017), with one primary method guiding the project and the secondary method embedded or nested within the primary method providing a supportive role. It is used for a number of purposes, but most often so that a researcher can gain a wider outlook than one research method alone cannot provide. The concurrent embedded model was used for this study

because of the ability to collect data during a single data collection phase and the opportunity to gain perspective from different types of data (Creswell, 2003).

Historically, mixed methods research has not been embraced by the field of special education, however Klinger and Boardman (2011) argue that mixed methods research should be incorporated and utilized by researchers in the field to help address the how and why that cannot be answered solely through quantitative methods. The concurrent embedded design, primarily quantitative with qualitative as support, was appropriate for this study because it was well suited to answer the research questions and allowed for the discovery of desired information using the survey questionnaire in a quick and accurate way.

Participants

The participants in this study were a purposive convenience sample. The purpose of the study was to investigate special education teachers' perceptions of HLPs as well as their opportunities to implement HLPs. To best fulfill the purpose, special educators teaching in special education positions in Hawai'i were recruited. To identify potential participants, special education contacts (i.e., principals, special education administrators, and special educators) across the state of Hawai'i were emailed the survey and asked to either forward the survey to their special education teachers or to email their encouragement for survey completion, while I emailed the potential participants the actual survey. Special education contacts were first asked to complete the survey then asked to let me know of any other potential participants. Criteria for selecting teachers included (a) a valid special education teaching license, (b) experience teaching students with disabilities, and (c) residence in Hawai'i. To determine response rate, the contacts were asked to provide the number of teachers the survey was sent to. In all situations involving forwarding the survey, the contact did respond with the number of recipients.

Instrumentation

For this study, I used a survey instrument piloted by Cook and Simpson-Steele (2018). They used the instrument to investigate preservice teachers' perceptions of their beliefs, skills, and practices with HLPs in their teacher preparation program. The main advantage of using an existing instrument was that it had been vetted by experts in the field of special education as well as the teacher candidates to whom the instrument was administered. Because the participants in the study were special education teachers, rather than teacher candidates, the instrument was modified and extended to ensure the research questions were thoroughly investigated.

There are two primary disadvantages to using survey methodology. The first is the potential that a question may be ambiguous or unclear. If a question is unclear, the participant cannot ask for clarity. The second disadvantage is that the participant does not have opportunity to expand on a response given (Fraenkel, Wallen, & Hyun, 2011).

To address the first disadvantage, I had experts in the field of special education review the survey instrument to help identify and alleviate question problems, breakdowns in the question-answering process, and any lack of clarity within the instrument. The primary goal of the expert review was to reveal any problems with the survey instrument so as to remedy it prior to sending to potential participants (Willis & Lessler, 1999). Reviewing the survey instrument in a structured methodical way is advantageous, so the experts were asked to review the HLP survey instrument using the QAS-99 system as their guide (see Appendix A for the QAS-99).

QAS-99 is a questionnaire appraisal system designed to aid in assessing survey questions so any issues can be resolved before the survey instrument is distributed for data collection. It is commonly used to improve the efficiency of the survey review process and consists of an easy and systematic method for locating potential problems within a survey instrument (Willis &

Lessler, 1999). The survey instrument was revised based on feedback received. The final version was uploaded into Qualtrics, an online survey software and questionnaire tool.

Pilot Test. As a pilot-test, the web-based survey link was provided to a small sample group of participants with contact and researcher information, the project description, the informed consent form, and the survey instrument. This small sample group of 10 special educators completed the survey and sent feedback on clarity of the instructions, ease of access, ability to take the survey on a smartphone, ability to take the survey on a tablet, and any technical glitches they encountered, such as the ability to take the survey multiple times. They also gave feedback on the clarity on the survey prompts. Finally, they were asked to time how long the survey took them to complete fully. It was important to value the participants' time, with the goal of keeping the survey to under 15 minutes, from start to finish. Nine out of ten participants completed the survey in 10 minutes or less. One participant forgot to time herself. The main feedback involved a question that generated the wrong open-ended question. A very helpful suggestion was to add examples for each HLP to the Google Document of definitions already linked to the survey instrument (Appendix E), to provide further clarification for those participants who were unsure of any of the practices. After receiving their feedback, the formatting in Qualtrics was reconfigured. The third survey iteration was published in Qualtrics, and was distributed as discussed above.

The second disadvantage to using survey methodology is that the participant does not have opportunity to expand on a response given. To address this disadvantage, open-ended questions were generated based on the answers given to the questions. The survey was developed using conditional branching, also known as skip logic. Follow up questions were generated if the

participant answered that he or she was skilled in the practice but had little opportunity to implement. See Appendix C for the specific skip logic questions.

Items on the survey were divided into two sections. The first section included each of the HLPs in the area of instruction. Each of the 12 Instruction HLPs were briefly defined, with both Likert scale and open response questions. See Appendix B for the survey instrument. To ensure full understanding by the participants, a Google Document containing in-depth definitions for each HLP was linked to each table. See Appendix E for the definitions and examples. The second section collected demographic information as well as questions relating to their sources for strategies used in the classroom. See Appendix D for demographic questions.

Procedures

After receiving approval from the University of Hawai'i's Committee on Human Studies, a small pilot study was conducted. The pilot study was used to ensure the survey design would investigate the research questions adequately. The pilot study was useful in highlighting issues and providing clarity suggestion, as previously discussed.

After completion of the pilot study, emails were sent to principals, special education administrators, and special educators in the state of Hawai'i. The perimeters in Qualtrics were set to generate follow up reminders at one-week intervals to participants who either did not start the survey or who partially completed it. This allowed the reminders to be emailed without compromising the anonymity of the participants. Research-based strategies were used for a positive response rate including three iterations of the survey to ensure careful survey design; pre-notification to potential participants of the survey; reminders for ample response opportunities; a 15 minute or less completion time for a manageable survey length; effective

communication of importance within the email notification; and the opportunity for survey feedback if desired (Baruch & Holtom, 2008).

The survey was emailed to 168 potential participants. Of the 168 who received the survey, three opted out of the survey and 90 completed it fully, resulting in a 54% response rate. The survey distribution was an iterative process. As referrals were provided, the survey instrument was emailed to those potential participants.

Data Analysis

Both quantitative and qualitative data were analyzed. Frequencies and percentages for participants' responses were calculated using Statistical Package for the Social Sciences (SPSS, version 26). Goodman-Kruskal's gamma was used to investigate potential associations or relationships between variables for each HLP in the area of instruction. Odds ratios were used to compare the potential influence of pathway to licensure and classroom setting on knowledge, skills, and opportunities to implement any of the HLPs.

Qualitative data were analyzed by first creating a file for each HLP and all written responses to open-ended questions were transferred into the appropriate file. Each entire file was read through initially to reflect on overarching main themes. Throughout the process, notes were used to help create and maintain organization as themes were uncovered. All responses to the open-ended questions were read through multiple times, to ensure theme consistency (Morse, 2016). The themes were then used to group the information for discussion (Creswell & Clark, 2017).

As previously discussed, the intent of a concurrent design is to merge the results of the quantitative and qualitative data in order to provide both perspectives of the topic. After the

results were merged, they were interpreted. The following chapter presents the results of the data analysis.

CHAPTER 4

RESULTS

In this chapter, the data collected from the survey participants are presented. The results and findings of the data analysis are reviewed for each research question:

1. How do special education teachers perceive their knowledge of HLPs in instruction?
2. How do special education teachers perceive their skills in implementing HLPs in instruction?
3. How do special education teachers perceive their opportunities to implement HLPs in instruction?

As discussed in Chapter 3, a concurrent mixed methods design was used for this study. This method consists of simultaneously collecting both quantitative and qualitative data during one data collection phase (Creswell, 2003). The analysis of the qualitative data was used to gain insight into the quantitative responses. This helped generate a more complete study of the research questions.

Demographics of the Participants

Educational level. Table 1 shows participant demographics. The survey included demographic data regarding the educational level of the participants. The categories consisted of: (a) bachelor's degree, (b) master's degree, (c) doctorate degree, and (d) bachelor's + post-baccalaureate program. Out of the 90 total participants, the frequency of teachers surveyed showed that 28 respondents held a bachelor's degree, 14 held a bachelor's + post-baccalaureate degree, 46 held a master's degree, and two held a doctorate (2.2%). All of the respondents completed the question regarding education level.

Path to licensure. The participants reported various pathways to special education licensure. Thirty were licensed after completing a traditional undergraduate teacher preparation program. The same number, 30, were licensed after completing a master's degree program. Eighteen were licensed after completing a post-baccalaureate program. Finally, 10 were licensed either through an alternative licensure program or a path other than those listed. Those licensed through an alternative licensure program or another path were asked to explain. The explanations included Teach for America as well as adding licensure through successful completion of the Special Education PRAXIS assessment and required years of teaching as an unlicensed special educator.

Years teaching. The participants were asked the number of years employed as a special education teacher. The choices available were (a) 0-5 years, (b) 6-10 years, (c) 11-15 years, (d) 16-20 years, (e) 21-25 years, (f) 26-30 years, (g) more than 30 years. The majority of participants (41) had been teaching for 0-5 years. The second highest category of years taught was 6-10 with 21 participants. The categories of 11-15 years and 16-20 years of experience as a special educator tied as the third highest category, with 9 in each of those categories. Six participants had been teaching for 21-25 years, one participant had been teaching for 26-30 years, and 3 participants had been teaching as a special educator for more than 30 years.

Grade levels. Participants were asked to choose which grade level they taught. Grade level options for participants to choose from included (a) preschool, (b) elementary, (c) middle/intermediate, and (d) secondary. The largest number of participants reported that they taught at the elementary level (n=54). The second largest group of participants reported that they taught at the secondary level (n=19). Fourteen participants reported that they taught at the middle school level and only three reported that they taught at the preschool level.

Classroom Settings. Special educators teach in a variety of settings. Because the settings are so varied based on the school site, the participants were asked to choose all that apply, rather than required to choose only one category. The 90 participants selected a total of 117 settings, indicating that some participants worked across settings. Choices for setting included, (a) inclusion, (b) resource/pull out, (c) fully self-contained, (d) general education, and (e) other. The choice of "other" allowed the participants to explain the setting, describing where they taught. The largest number of participants reported that they taught in an inclusive setting (44). Very close to the number of participants who taught in inclusive settings were the number of those who reported that they taught in a resource or pull out setting (40). Twenty-three participants reported that they taught in a fully self-contained setting. Ten participants reported that they taught in a general education setting. Those who chose to explain included versions of the following settings: "co-teaching social studies," "resource for ELA and math," "co-teaching for science and social studies," and "pull-out setting with SWD and non-identified general education students who struggle."

Table 1

Participant demographics

Experience		Pathway to Licensure		Classroom Setting		Grade Level	
0-5	41	Bachelor's	30	Inclusion	44	Preschool	3
6-10	21	Post-Baccalaureate	18	Resource	40	Elementary	54
11-15	9	Master's	30	Fully Self Contained	23	Middle/Intermediate	14
16-20	9	Alternative	12	General Education	10	Secondary	19
21-25	6						
26-30	1						
30 +	3						

Quantitative Data Analysis

Quantitative data analysis is organized by first examining the data as relating to each research question, then examining the HLPs rank ordered based on participants' responses. Relationships between knowledge and skills as well as between skills and opportunities to implement were then calculated using Goodman-Kruskal's gamma (γ). Finally, odds ratios (OR) were calculated to determine associations between variables and participant responses.

Knowledge of HLPs. The first research question of the study was: How do special education teachers perceive their knowledge of HLPs in instruction? The first section of the survey gauged the participants' perceptions of their knowledge of each of the 12 High-Leverage Practices in instruction. As described in Chapter 3, participants were asked to self-assess their knowledge of each practice as (a) not knowledgeable, (b) slightly knowledgeable, (c) moderately knowledgeable, or (d) very knowledgeable.

Table 2 shows the participants' responses to the survey question on their knowledge of each HLP in the area of instruction. Participants self-reported being most knowledgeable in HLPs 1, 2, and 12. Ninety-four 94% reported that they were moderately or very knowledgeable in providing positive and corrective feedback (HLP 12), 93% reported that they were moderately or very knowledgeable in identifying and prioritizing learning goals (HLP 1), and 91% reported they were moderately or very knowledgeable in systematically designing instruction toward a specific learning goal (HLP 2).

Participants self-reported being least knowledgeable in HLPs 4, 9, and 11. Forty percent of the participants reported being not knowledgeable or slightly knowledgeable in using assistive and instructional strategies (HLP 9), 36% reported being not knowledgeable or slightly knowledgeable in teaching cognitive and metacognitive strategies to support learning and

independence (HLP 4), and 24% reported being not knowledgeable or slightly knowledgeable in teaching students to maintain and generalize new learning across time and settings (HLP 11).

Table 2

Responses to knowledge of practices (percent)

HLP in the area of Instruction	Not Knowledgeable	Slightly Knowledgeable	Moderately Knowledgeable	Very Knowledgeable
1. Identifying and prioritizing learning goals.	0	6.7%	57.8%	35.6%
2. Systematically designing instruction toward a specific learning goal.	0	8.9	55.6	35.6
3. Adapting curriculum tasks and materials for specific learning goals.	0	10	46.7	43.3
4. Teaching cognitive and metacognitive strategies to support learning and independence.	3.3	33.3	44.4	18.9
5. Providing scaffolded supports.	0	12.2	40.0	47.8
6. Using explicit instruction.	0	10.0	32.2	57.8
7. Using flexible grouping.	0	12.2	43.3	44.4
8. Using strategies to promote active student engagement.	0	14.4	47.8	37.8
9. Using assistive and instructional technologies.	4.4	35.6	40.0	20.0
10. Providing intensive instruction.	3.3	20.0	36.7	40.0
11. Teaching students to maintain and generalize new learning across time and settings.	1.1	23.3	51.1	24.4
12. Providing positive and corrective feedback.	0	5.6	36.7	57.8

Skill level of HLPs. The second question of the study was: How do special education teachers perceive their skills implementing HLPs in instruction? The second section in the survey gauged the participants' perceptions of their skill in each of the High-Leverage Practices

in instruction. Participants selected (a) not skilled, (b) slightly skilled, (c) moderately skilled, or (d) very skilled.

Table 3 shows the participants' responses to the survey question on their skill level of each HLP in the area of instruction. Some similarities and differences arose between participant's self-assessment of their knowledge and their skills. Although participants self-reported being most knowledgeable in HLPs 1, 2 and 12, participants self-reported being most skilled in HLPs 1, 6, 8, and 12. Ninety-three percent reported they were moderately or very skilled in providing positive and corrective feedback (HLP 12), 88% reported that they were moderately or very skilled in identifying and prioritizing learning goals (HLP 1), and 87% reported they were moderately or very skilled in both using explicit instruction (HLP 6) and using strategies to promote active student engagement (HLP 8).

Participants self-reported being least skilled in HLPs 4, 9 and 11, the same HLPs they reported being the least knowledgeable about. Forty-eight percent of the participants reported being not skilled or slightly skilled in using assistive and instructional strategies (HLP 9), 38% reported being not skilled or slightly skilled in teaching cognitive and metacognitive strategies to support learning and independence (HLP 4), and 31% reported being not skilled or slightly skilled in teaching students to maintain and generalize new learning across time and settings (HLP 11).

Table 3

Responses to skill level of practices (percent)

HLP in the area of Instruction	Not Skilled	Slightly Skilled	Moderately Skilled	Very Skilled
1. Identifying and prioritizing learning goals.	0	12.2%	55.6%	32.2%
2. Systematically designing instruction toward a specific learning goal.	0	16.7	51.1	32.2
3. Adapting curriculum tasks and materials for specific learning goals.	0	14.4	50.0	35.6
4. Teaching cognitive and metacognitive strategies to support learning and independence.	3.3	34.4	44.4	17.8
5. Providing scaffolded supports.	0	15.6	43.3	41.1
6. Using explicit instruction.	0	13.3	41.1	45.6
7. Using flexible grouping.	1.1	21.1	45.6	32.2
8. Using strategies to promote active student engagement.	0	13.3	47.8	38.9
9. Using assistive and instructional technologies.	8.9	38.9	35.6	16.7
10. Providing intensive instruction.	5.6	20.0	37.8	36.7
11. Teaching students to maintain and generalize new learning across time and settings.	3.3	27.8	45.6	23.3
12. Providing positive and corrective feedback.	0	7.8	47.8	44.4

Opportunities to implement HLPs. The third question of the study was: How do special education teachers perceive their opportunities to implement HLPs in instruction? The third section on the survey gauged the participants' opportunities to implement each of the High-Leverage Practices in instruction. Participants selected (a) never, (b) rarely, (c) sometimes, or (d) often.

Table 4 shows the participants' responses to the survey question about their opportunities to implement each HLP in the area of instruction. Participants self-reported sometimes or often having opportunities to implement HLPs 1, 5, 6, and 12. Ninety-seven percent reported that they sometimes or often have opportunities to use explicit instruction (HLP 6), 96% reported sometimes or often having opportunities to provide scaffolded supports (HLP 5), and 95% reported sometimes or often having opportunities to identify and prioritize learning goals (HLP 1) as well as opportunities to provide positive and corrective feedback (HLP 12).

Participants self-reported never or rarely having opportunities to implement HLPs 4, 9, and 10. Thirty-one percent of the participants reported never or rarely having opportunities to use assistive and instructional technologies (HLP 9) and 18% reported never or rarely having opportunities to teach cognitive and metacognitive strategies to support learning and independence (HLP 4), as well as never or rarely having opportunities to provide intensive instruction (HLP 10).

Table 4

Responses to opportunities to implement practices (percent)

HLP in the area of Instruction	Never	Rarely	Sometimes	Often
1. Identifying and prioritizing learning goals.	0	5.6%	26.7%	67.8%
2. Systematically designing instruction toward a specific learning goal.	0	7.8	33.3	58.9
3. Adapting curriculum tasks and materials for specific learning goals.	1.1	4.4	34.4	60.0
4. Teaching cognitive and metacognitive strategies to support learning and independence.	2.2	15.6	40.0	42.2

5. Providing scaffolded supports.	1.1	2.2	22.2	74.4
6. Using explicit instruction.	1.1	2.2	17.8	78.9
7. Using flexible grouping.	3.3	13.3	41.1	42.2
8. Using strategies to promote active student engagement.	1.1	4.4	30.0	64.4
9. Using assistive and instructional technologies.	10.0	21.1	42.2	26.7
10. Providing intensive instruction.	7.8	10.0	35.6	46.7
11. Teaching students to maintain and generalize new learning across time and settings.	3.3	10.0	46.7	40.0
12. Providing positive and corrective feedback.	1.1	4.4	18.9	75.6

High-leverage practices ordered by participant response. The previous sections covered the data analysis regarding knowledge, skill level, and opportunities to implement each HLP as self-reported by the participants. This section is not a new analysis, rather a different way of viewing the previous analysis, summarizing the participants' responses in one table, to better analyze each HLP across areas. Table 5 contains the order of participants' responses for each area (knowledge, skill, and opportunities to implement). First, the percentages of the highest two categories for each HLP were totaled (moderately + very for knowledge and skill, sometimes + often for opportunities to implement), then arranged with highest being 1 and lowest being 12.

Providing positive and corrective feedback and *using explicit instruction* remain in the top three across knowledge, skill, and implementation, although *using explicit instruction* is higher in implementation than knowledge and skill levels. *Providing scaffolded supports* falls in the middle for knowledge and skill, but is the highest reported strategy being implemented. *Teaching cognitive and metacognitive strategies to support learning and independence* and *using assistive and instructional technologies* are strategies that are reported as consistently low in all three areas. In other words, participants do not feel they know about these strategies, nor are they

skilled in them. They also do not feel they have many opportunities to implement them in the classroom.

Table 5

HLPs in order of participant responses

	Knowledge	Skill	Opportunities to Implement
1.	Providing positive and corrective feedback.	Providing positive and corrective feedback.	Using explicit instruction.
2.	Identifying and prioritizing learning goals.	Identifying and prioritizing learning goals.	Providing scaffolded supports.
3.	Using explicit instruction.	Using explicit instruction.	Providing positive and corrective feedback.
4.	Systematically designing instruction toward a specific learning goal.	Using strategies to promote active student engagement.	Identifying and prioritizing learning goals.
5.	Adapting curriculum tasks and materials for specific learning goals.	Adapting curriculum tasks and materials for specific learning goals.	Using strategies to promote active student engagement.
6.	Providing scaffolded supports.	Providing scaffolded supports.	Adapting curriculum tasks and materials for specific learning goals.
7.	Using flexible grouping.	Systematically designing instruction toward a specific learning goal.	Systematically designing instruction toward a specific learning goal.
8.	Using strategies to promote active student engagement.	Using flexible grouping.	Teaching students to maintain and generalize new learning across time and settings.
9.	Providing intensive instruction.	Providing intensive instruction.	Using flexible grouping.
10.	Teaching students to maintain and generalize new learning across time and settings.	Teaching students to maintain and generalize new learning across time and settings.	Providing intensive instruction.
11.	Teaching cognitive and metacognitive strategies to support learning and independence.	Teaching cognitive and metacognitive strategies to support learning and independence.	Teaching cognitive and metacognitive strategies to support learning and independence.

Relationships between knowledge, skill, and opportunities to implement. Goodman-Kruskal's gamma (γ), a measure of rank correlation, was used to investigate whether there was an association or relationship between variables for each HLP in the area of instruction. Specifically, Goodman-Kruskal's gamma was used to determine associations between participants' self-reported knowledge level and skill level as well as participants' self-reported skill level and opportunities to implement each practice. Gamma was the appropriate choice because the data used for this study was ordinal and contained Likert-type items (Sheskin, 2003).

Gamma (γ) ranges from -1 to 1. A positive gamma indicates a positive association or relationship, whereas a negative gamma indicates a negative association or relationship. A perfect association or relationship between variables will result in a gamma equal to 1. If the variables are void of a relationship, or independent of association, gamma would be closer to 0.

Approximate statistics are used with ordinal data because equal distance or normal distributions do not exist. Approximate statistics show the statistical significance value or p-value. The Goodman-Kruskal gamma showed that there was a significant high positive association between knowledge and skills in each of the HLPs in the area of instruction, with statistical significance for all of the HLPs analyzed.

Table 6 shows the gamma value and approximate significance between knowledge and skills as well as skills and opportunities to implement for each of the HLPs in the area of instruction. Because of the high, statistically significant association between knowledge and skills, analyzing the association between knowledge and opportunities to implement HLPs was not warranted. When analyzing the relationship between the participants' self-reported skills and opportunities to implement each of the HLPs, there was a strong positive relationship reaching statistically significance of $p<.05$ and Goodman-Kruskal gamma value of .60 or higher for *using*

explicit instruction, *using flexible grouping, using assistive and instructional technologies*. In other words, there was a strong likelihood that those teachers who were skilled in *using explicit instruction, using flexible grouping*, and *using assistive and instructional technologies* also had opportunities to implement those practices. Those HLPs that had a weaker, but still positive relationship between self-reported skill level and opportunities to implement were *identifying and prioritizing learning goals*, *using strategies to promote active student engagement*, and *providing positive and corrective feedback*. Of particular interest is that *identifying and prioritizing learning goals* had one of the highest positive relationships between knowledge and skills, but the lowest relationship between skills and opportunities to implement. In other words, it appears that those who self-reported having knowledge of *identifying and prioritizing learning goals* also self-reported being skilled. Despite being skilled, they felt they did not have many opportunities to use that strategy in their classrooms.

Table 6

Goodman-Kruskal gamma, relationship between variables

	Knowledge and Skills		Skills and Opportunities to Implement	
HLP in the area of Instruction	Gamma	Approximate Significance	Gamma	Approximate Significance
1. Identifying and prioritizing learning goals	.968	.000	.350	.061
2. Systematically designing instruction toward a specific learning goal	.960	.000	.541	.001
3. Adapting curriculum tasks and materials for specific learning goals	.930	.000	.533	.000
4. Teaching cognitive and metacognitive strategies to support learning and independence	.852	.000	.559	.000
5. Providing scaffolded supports	.965	.018	.518	.005
6. Using explicit instruction	.887	.000	.607	.004
7. Using flexible grouping	.911	.000	.688	.000

8. Using strategies to promote active student engagement	.907	.000	.433	.011
9. Using assistive and instructional technologies	.897	.000	.665	.000
10. Providing intensive instruction	.953	.000	.569	.000
11. Teaching students to maintain and generalize new learning across time and settings	.908	.000	.420	.004
12. Providing positive and corrective feedback	.944	.000	.463	.026

Odds ratios. Table 7 shows the odds ratio and significance for knowledge as predicted by participants' pathway to licensure. Table 8 shows the odds ratio and statistical significance for skill level as predicted by participants' pathway to licensure. Odds ratio is a measure that examines the potential association between exposure to a variable (e.g. classroom setting or pathway to licensure) and ordinal outcomes (Szumilas, 2010). Odds ratios were calculated for both pathway to licensure and classroom settings as variables to investigate if there were any potential associations between those variables and knowledge, skills, and opportunities to implement HLPs. Odds ratio calculations for knowledge, with alternative licensure as the control group, indicated that teachers who went through a post-baccalaureate program, were approximately eight and one half times (OR=8.64) more likely to report being in a higher category versus the combined lower categories in *identifying and prioritizing learning goals* and approximately four and one-half times (OR=4.52) more likely to report being in a higher category versus the combined lower categories in *teaching students to maintain and generalize new learnings across time and setting* when compared to the other pathways to licensure groups. Odds ratio calculations for skill, with alternative licensure as the control group, indicate that teachers who went through a post-baccalaureate program were also five and one-half times (OR=5.51) more likely to report being in a higher category versus the combined lower categories

in *identifying and prioritizing learning goals*, compared to other pathways to licensure groups. This was the same HLP they were more likely to report being knowledgeable in. Teachers who went through a traditional bachelor's, post-baccalaureate, or master's program for licensing were all more likely to be report being in a higher category as knowledgeable versus the combined lower categories in *using explicit instruction* than teachers who were licensed through alternative pathways (OR=5.64, 8.76, and 4.65 respectively). While teachers who went through all but alternative licensure pathways were more likely to report being in a higher category than the combined lower categories as knowledgeable in *using explicit instruction,* only those teachers who went through a post-baccalaureate program were more likely to report being in a higher category than the combined lower categories as skilled (OR=8.41). In addition, regarding skill level, teachers who went through a master's program were approximately four times (OR=3.99) more likely to report being in a higher category than the combined lower categories as skilled in *using strategies to promote active student engagement* than other licensure pathways.

Table 7

Odds ratio and statistical significance for knowledge level, predicted by licensure pathway

HLP in the area of Instruction	B.Ed		Post-Bac		Master's	
	Odds Ratio	Sig.	Odds Ratio	Sig.	Odds Ratio	Sig.
1. Identifying and prioritizing learning goals	3.07	.16	8.64	.016	3.19	.146
2. Systematically designing instruction toward a specific learning goal	1.31	.716	2.64	.235	0.95	.940
3. Adapting curriculum tasks and materials for specific learning goals	1.07	.921	1.30	.748	1.43	.619
4. Teaching cognitive and metacognitive strategies to support learning and independence	2.03	.300	2.94	.164	3.12	.103

5. Providing scaffolded supports	1.35	.666	2.36	.262	1.25	.751
6. Using explicit instruction	5.64	.016	8.76	.009	4.65	.032
7. Using flexible grouping	1.75	.423	.98	.979	2.75	.153
8. Using strategies to promote active student engagement	1.75	.426	3.94	.088	2.48	.199
9. Using assistive and instructional technologies	1.16	.819	1.73	.470	1.16	.829
10. Providing intensive instruction	2.20	.238	3.39	.113	2.77	.139
11. Teaching students to maintain and generalize new learning across time and settings	1.90	.359	4.52	.059	1.90	.171
12. Providing positive and corrective feedback	1.84	.389	1.03	.964	2.69	.178

Table 8

Odds ratio and statistical significance for skill level, predicted by licensure pathway

HLP in the area of Instruction	B.Ed		Post-Bac		Master's	
	Odds Ratio	Sig.	Odds Ratio	Sig.	Odds Ratio	Sig.
1. Identifying and prioritizing learning goals	1.30	.721	5.51	.041	1.72	.461
2. Systematically designing instruction toward a specific learning goal	.88	.847	1.63	.532	.73	.648
3. Adapting curriculum tasks and materials for specific learning goals	.57	.401	1.14	.873	1.14	.853
4. Teaching cognitive and metacognitive strategies to support learning and independence	3.03	.112	2.27	.294	3.74	.063
5. Providing scaffolded supports	1.11	.883	1.65	.520	.97	.963
6. Using explicit instruction	2.61	.166	8.41	.011	1.88	.367
7. Using flexible grouping	1.40	.615	1.20	.819	1.90	.350
8. Using strategies to promote active student engagement	2.56	.186	3.46	.120	3.99	.055
9. Using assistive and instructional technologies	2.41	.197	1.93	.388	1.80	.386
10. Providing intensive instruction	1.15	.835	2.89	.169	1.57	.507
11. Teaching students to maintain and generalize new learning across	1.12	.872	2.44	.248	1.75	.412

time and settings						
12. Providing positive and corrective feedback	1.92	.363	.79	.762	1.58	.524

Table 9 shows the odds ratio and significance for the opportunities to implement high-leverage practices as predicted by participants' classroom setting. Odds ratio calculations for opportunities to implement, with fully self-contained classroom as the control group, indicate that teachers in a resource setting were almost sixteen and one-half times (OR=16.40) more likely to report being in a higher category than the combined lower categories as having opportunities to *identify and prioritize learning goals* than teachers in other settings. Teachers in a resource setting were also approximately seven times (OR=7.06) more likely to report being in a higher category than the combined lower categories as having opportunities to *use strategies to promote active student engagement*. Teachers in inclusive settings, according to odds ratio calculations, were approximately three and three-fourths times (OR=3.71) more likely to report being in a higher category than the combined lower categories as having opportunities to *provide scaffolded supports* and approximately two and three-fourths times (OR=2.82) more likely to use *flexible grouping* than teachers in other settings. However, teachers in inclusive settings were 73% less likely to report being in a higher category than the combined lower categories as having opportunities to *use assistive and instructional technologies* (OR=.27) and 76% less likely to report being in a higher category than the combined lower categories as having opportunities to *provide intensive instruction* (OR=.24).

Table 9

Odds ratio and statistical significance for opportunities to implement, predicted by classroom setting

HLP in the area of Instruction	Inclusion		Resource	
	Odds Ratio	Sig.	Odds Ratio	Sig.
1. Identifying and prioritizing learning goals	1.68	.385	16.40	.016
2. Systematically designing instruction toward a specific learning goal	1.99	.233	3.19	.122
3. Adapting curriculum tasks and materials for specific learning goals	1.80	.320	1.42	.632
4. Teaching cognitive and metacognitive strategies to support learning and independence	1.26	.676	2.10	.281
5. Providing scaffolded supports	3.71	.036	3.00	.173
6. Using explicit instruction	1.90	.342	1.52	.643
7. Using flexible grouping	2.82	.061	2.16	.259
8. Using strategies to promote active student engagement	2.41	.132	7.06	.018
9. Using assistive and instructional technologies	.27	.019	.75	.671
10. Providing intensive instruction	.24	.018	.50	.342
11. Teaching students to maintain and generalize new learning across time and settings	.47	.180	1.32	.698
12. Providing positive and corrective feedback	1.73	.395	1.79	.483

Qualitative Data Analysis

Using open-ended questions within a survey allows for the topic to be explored with more depth (Morse, 2016). Open-ended questions were generated based on the participants' selections regarding their skill level and opportunities to implement each HLP. If participants selected *moderately* or *very skilled*, but *never* or *seldom* have opportunity to implement a HLP, they received the following prompt: *You reported being moderately or very skilled in (name of HLP) but report never or rarely having opportunities to do so. Please explain what those*

barriers are and what might allow you more opportunities for implementation. In a further attempt to gain knowledge on barriers that may hinder HLP implementation, participants who selected *moderately* or *very skilled* in an HLP but reported *sometimes* having the opportunity to implement it were asked to "*explain any barriers that kept you from selecting "often" when addressing the opportunities to implement."*

Answers to open-ended questions were copied verbatim into computer files with one file per HLP. The responses were analyzed and organized into themes of interest (Creswell, 2003). Notes were kept throughout the process. All responses to the open-ended questions were read through multiple times, to ensure theme consistency (Morse, 2016). The themes were then used to group the information for discussion (Creswell & Clark, 2017).

Barriers. There were four main themes that emerged in participants' responses about barriers for all of the HLPs. The themes that emerged were (a) lack of time, (b) co-teacher control, (c) fully self-contained settings, and (d) lack of support or resources.

Lack of time. Lack of time was the most common theme that ran through the participants' responses regarding barriers to implementing HLPs in the area of instruction. Some of the participants discussed lack of time because of all of the responsibilities of a special educator, such as this participant who wrote, "There are TOO many responsibilities. I have to pick and choose what's the most important at the time. Not being able to do everything that is needed for the kids is hard, but it's even harder when I have to say only some things can get done because I have other responsibilities on my plate." Another participant described teaching as a special educator this way, "I have heard my classroom described as 'a five-ring circus' by a district autism consultant teacher. Students' needs vary so much and there is only ONE me. I

personally feel I rarely am able to get to ALL students every day and I have a relatively small special education class."

While some participants discussed lack of time barriers in terms of being a special educator, others referred to lack of time as simply not enough time in the day. One participant wrote, "TIME, TIME, TIME. We do not have enough of it or the means to get it done." Another participant wrote, "Lack of time from other work responsibilities. Not enough time throughout the day." Finally, a participant wrote, "It takes a lot of time to intentionally plan ways to engage the students more with some of the strategies that I know." Other participants simply wrote, "Time!"

Co-teacher control. The barrier of co-teacher control was the theme that participants seemed most passionate about, writing more lengthy explanations than were written for any other barrier. One participant wrote,

> "I would like to use strategies that I feel would promote active student engagement, I don't feel that I can because the general education teacher is in the lead and she calls the shots. I would like to implement some of my creative ideas but I feel blocked from doing so. I do respect and get along well with my co-teacher (lead teacher), but she is very attached to her own curriculum, procedures, and ways of doing things."

Similarly, a participant wrote, "I feel that I am capable of implementing these goals but working with another co-teacher who does not feel the same way." Others wrote about the negative side of co-teacher control. A participant summed up her experience by writing,

> "I'm the special education co-teacher and the general education co-teacher is very attached to the curriculum she's designed and had in place …. I'm also new and she's the veteran teacher. When I had to do my EES [Educator Effectiveness System] she was a bit

> reluctant to have me interrupting her curriculum. I knew that was going to be the case so I brought my mentor with me to explain the lesson I was doing. I put a lot of planning and extra hours into this lesson and felt very confident in the design of my lesson. She would only allow me to implement the lesson during one of our (middle school) blocks and it was the very short 35-minute block. It was simply not enough time; it was rushed because I was not allowed by her to have a few extra days to finish it as I would have liked (her curriculum is set on a timeline before the quarter ends). I received a proficient grade for the EES observation from my evaluator, who also noted my strength in the design of the instruction."

A final participant expressed her experience with co-teacher control by stating, "A challenge I have is convincing the General Education teacher that certain adaptations (e.g. read text aloud, verbal response, Text Compactor, Rewordify) are appropriate and valid ways for the student to access the content."

Fully self-contained setting. Participants teaching in fully self-contained settings (FSC) indicated they were knowledgeable and skilled in HLPs but did not have as many opportunities to implement the practices because the population they teach have more moderate to severe disabilities. One participant wrote, "It is difficult to create lessons specific to students' goals when all the students, in a fully self-contained setting, have a wide range of academic levels and abilities." Similarly, a participant wrote, "Being in a self-contained classroom we do not get a lot of opportunities to get our students actively engaged because of their language skills or different abilities." Finally, a participant had this to say about implementing HLPs in the FSC setting, "I do provide positive feedback, but constructive feedback with my students is difficult as I work

with low to moderately disabled students and I don't think I could explain to them in a constructive manner that they could understand."

Lack of support or resources. Lack of support was written about across HLPs as a barrier to using them in the classroom. Some participants wrote about lack of support in terms of resources, while others wrote about lack of support from the administration or district. One participant wrote, "I struggle with obtaining support and opportunity to provide my special education students access to a variety of settings to promote generalization and maintenance of taught skills, access to general education, field trips, etc." Regarding a lack of support regarding resources, another participant wrote, "I change the dynamics and structure of the classroom but I do not have access to integrate additional curriculums and setting such as field work, career shadowing and public service." Another issue with support and resources was the limited number of educational assistants. A participant wrote, "We create wonderful lesson plans and activities to help our students practice their IEP goals, however, because of the lack of support in the classroom (specifically aides), it can be very difficult to consistently use these activities with the students." While others wrote about the lack of physical resources, as this teacher said, "Not having a diverse leveled reader library at our school or even just limited QUALITY books hasn't really supported choosing books that are appropriate for my students."

Other participants discussed a perceived lack of support from the administration. One participant wrote, "The school fails to arrange time for special education teachers to work with students outside of the 'resource' setting. The school fails to provide collaboration time between special and general education staff and support staff." While another teacher simply stated, "Discouragement from administration." Other participants mentioned the lack of support at the state level, "So I would say the barriers that prevent me from saying that I can prioritize long

term goals is the state and its standards." Finally, another teacher wrote about the standards and assessment requirements, "Common core standards and statewide mandatory assessments have most of our teachers working non-stop teaching standards, often trying to use pacing guides that were created by the vendors of said curricula, regardless of student mastery, and without thought to whether or not that pace is appropriate for our students."

Summary. Participants wrote about the barriers that keep them from implementing the HLPs, and the themes that emerged included lack of time, issues with co-teachers, lack of support or resources, teaching in an FSC, and being a first-year teacher. One participant summed up all the themes except teaching in an FSC in one, passionate statement when she wrote,

> "This is my first-year teaching as a licensed special education teacher and I'm working as a co-teacher in an inclusion setting. I've been paired with a teacher who has been teaching the same curriculum … this is clearly 'her classroom' that I've joined. I have great respect for her expertise, knowledge, and skills, however, there are things that I would like to do differently. I'm following her curriculum in a supportive role in the classroom. I'm a very creative person and would like to put a spin on her curriculum with some fresh, new ideas that involve arts integration. On the other hand, I am a special education teacher and as such, my responsibilities involve targeting the IEP students during each block. I also have a caseload of 11 students as a care coordinator. From my understanding of co-teaching we are both supposed to be designing instruction together, but with the added responsibilities I have this would be difficult. Also, the general education teacher does not have the skillset that I have for special education. So, having interchangeable roles would be challenging. For example, the general education teacher is not going to be writing the IEPs or taking on my caseload. Having enough time in the day for all of the

responsibilities is another challenge. My day does not officially end at 2:45 p.m., I usually get home by 5:00 p.m. and still have responsibilities I'm doing from home such as grading half of the student's papers (homework, tests, quizzes), responding to emails, or writing IEPs."

Unique themes. In addition to the themes that occurred throughout all HLPs, there was a unique theme of limited access with respect to *using assistive and instructional technology*. In discussing limited access, one participant wrote, "The reason I rarely have the opportunity to use assistive technology is because I don't know how to get it. I feel that it is seldom talked about in IEPs and the assessments/process to get it is unknown. It is expensive, so it may be that they don't want to pay for it. I have taken several classes on assistive and instructional technologies and there is a wealth of knowledge online." Others added, "I don't have a lot of access to assistive technologies in my room with my students." "I have limited access to technology in my classroom. And I am in the process of using my own money to purchase," and "I am skilled in some assistive and instructional technology, but it all depends on the resources I have at the school I am teaching at."

How HLPs are implemented. Finally, another major theme that emerged across all HLPs was not barriers, but rather how HLPs were implemented. When asked to discuss the barriers, some participants discussed implementation of the HLP instead, indicating that they were implementing the HLP more than they originally thought. One participant wrote, "I have participation logs linked to incentive programs for my middle schoolers. In elementary I also use nonverbal hand signals for students to show they understand, have questions, agree or disagree with a speaker. I check frequently for understanding, and in my lessons, always build in ways for

my students to demonstrate their understanding. For many of my students with disabilities, that means repeating ideas back to me in their own words."

"I implement assistive technologies such as pencil grips or rubber bands around the wrist and pencil."

"Some of my students use voice-to-text and text-to voice, Motivaiders, and other discrete interval timer devices. All of my students have Google Sites housing their accommodations and DLN resources. I frequently incorporate Quizlet, eBook Creator, Google Classroom, Readworks, Imagine Learning, and other digital programs and devices in my instruction."

> "Many of my students have difficulty storing and retrieving information, so we do a lot of repeated practice. We also revisit previously mastered skills for maintenance. Some students have a very hard time generalizing skills, so I create opportunities for different types of practice. For example, for a student with social skills, I'll provide direct instruction on greetings. After he masters it in the resource room setting, I'll take him on a walk to practice with other people on campus. Another example is in math. I will practice an isolated skill like multiplication, and then introduce different types of word problems and real life scenarios that force the student to apply the skill flexibly."

Sources for Strategies. A final question of the survey asked participants, *If you want more information on a strategy, what do you use as a source? Using the following sources, (or your own choices), list the ones you use in order that you would use them. Some possible sources include: Colleagues, university program coursework, peer-reviewed journals, workshops, google search, other online sites (write site most visited), and/or other sources.* Table 10 shows the number of participants who listed each source as their first choice when looking for more information on a strategy. Half of the participants reported that they go to colleagues first, 22

reported they conduct a Google search without mentioning anything to indicate the search included parameters that include using reputable or research-based sites, while 6 reported a search of reputable, research-based sites. Four participants reported "None" or "N/A" to indicate they do not seek information on strategies.

Table 10

Sources for information on strategies

Source	Number of participants who selecting as first choice
Colleagues	45
Google	22
Workshops	12
Research sites	6
University coursework	2
None	3
Total	90

Summary

In chapter 4, general quantitative and qualitative findings were presented. In the next chapter, the findings will be expanded upon and discussed, with interpretations and explanations provided. Study limitations will also be discussed. In addition, recommendations for future research and practice related to High-Leverage Practices in special education will be given.

CHAPTER 5

DISCUSSION AND CONCLUSION

The purpose of this mixed methods study was to investigate special educators' perceptions of CEC's newly proposed high-leverage practices in the area of instruction. The research questions were:

1. How do special education teachers perceive their knowledge of HLPs in instruction?
2. How do special education teachers perceive their skills in implementing HLPs in instruction?
3. How do special education teachers perceive their opportunities to implement HLPs in instruction?

Overall, 85% of special educators surveyed reported being knowledgeable in eight of the 12 instructional HLPs; 80% reported being skilled in seven of the 12 instructional HLPs. This is important, because if a teacher feels they are skilled in a practice, they will be more likely to implement it (Gersten et al., 2009). Results also indicated that over 80% of the special educators surveyed felt they sometimes or often have opportunities to implement eleven out of the 12 instructional HLPs.

Special Educators' Rankings of HLPs in Instruction

Data analysis included ranking the participants' knowledge, skill, and opportunities to implement instructional HLPs. Analyzing the order of the HLPs, as determined by participants' responses, made the highest (most knowledgeable and skilled) and lowest (least knowledgeable and skilled) readily apparent. It also allowed some interesting discrepancies to be evident. The highest and lowest ranked HLPs, as well as the discrepancies, warrant discussion.

Highest ranked. As presented in the previous chapter, this study found that over 85% of special educators in Hawai'i reported, out of the 12 HLPs in instruction, being knowledgeable in eight of twelve and skilled in seven of twelve. Furthermore, over 80% reported having opportunities to implement eleven of the twelve HLPs in instruction. It is overwhelmingly positive that participants reported being knowledgeable, skilled, with opportunities to implement almost all of the HLPs in instruction. Participants' rank ordering of the HLPs indicated they felt most knowledgeable and skilled with the most opportunities to implement *providing positive and corrective feedback, identifying and prioritizing learning goals, using explicit instruction, adapting curriculum tasks and materials for specific learning goals, and providing scaffolded supports.*

The HLPs that were ranked the highest in the current study are practices that are included in special education teacher preparation programs and are somewhat straightforward for higher education faculty to present and model. They are also practices that special education teacher candidates can demonstrate in a single lesson (e.g, *providing positive and corrective feedback)* rather than practices that require implementation over time through a series of lessons (e.g., *generalization and maintenance of skills across time and settings*). *Feedback, goals, adapting tasks, and scaffolding,* are all practices that are generally included on field observation forms and field supervisors expect to see these practices implemented. The Charlotte Danielson Framework for Teaching (FFT) is a research-based tool developed over 20 years ago by Charlotte Danielson. The FFT is the most widely used definition of effective teaching in the United States and is accepted as a way for teachers to self-evaluate their performance as they strive to be a highly effective teacher ("Our Story," n.d.). The FFT consists of three domains, (a) planning and preparation, (b) classroom environment, and (c) instruction. The FFT is used by the state of

Hawai'i in their Educator Effectiveness System (EES), a comprehensive evaluation system used to assess the performance of teachers in the Hawai'i Department of Education. The EES uses the FFT as a framework for the classroom observations and core professionalism components of the system ("Hawaii DOE | Educator Effectiveness System," n.d.). *Providing positive and corrective feedback* and *providing scaffolded supports* are included under domain three, instruction, while *adapting curriculum tasks and materials for specific learning goals* is included under domain one, planning and preparation. *Identifying and prioritizing learning goals* is included under domains one and three. It stands to reason that the participants would be familiar with the FFT, and therefore would be knowledgeable of those HLPs listed above that were also under the FFT domains.

The only HLP that was highly ranked but not specifically included on the FFT was *using explicit instruction.* The cornerstone of special education has been individualization, with instruction specifically developed to meet the unique needs of each student. Instruction, in the field of special education, is discussed in terms of explicit and systematic (Pullen & Hallahan, 2015), so it stands to reason that the participants would consider themselves knowledgeable and skilled in the HLP of *using explicit instruction.*

Lowest ranked. Participants' rank ordering of HLPs indicated they felt the least knowledgeable and skilled with fewest opportunities to implement *teaching students to maintain and generalize new learning across time and settings, teaching cognitive and metacognitive strategies to support learning and independence,* and *using assistive and instructional technologies.*

The HLPs that were ranked the lowest in this study are practices that take longer than a lesson to implement and may be implemented across lessons, rather than within one lesson.

While some mentor teachers may model and describe implementing these practices, more often preservice teachers may observe only parts of the implementation process as the instructional practice is stretched over a period of time. They are also practices that may be a little more complicated to master.

Teaching students to maintain and generalize new learning across time and settings, according to participants' comments, can be difficult because they do not have access to real world situations that would allow for them to expose their SWD to a variety of situations. Generalization occurs when a newly learned behavior occurs when the conditions are different from those in which the behavior was originally learned. Maintenance occurs when the behavior occurs across time (Stokes & Baer, 1977). These are complex skills that can be enhanced through the use of authentic materials and variations in instruction as well as frequent opportunities to use the behavior (Drasgow et al., 2011). When teachers are limited by controlled conditions and less than authentic materials, generalization is restricted (Rincover & Koegel, 1975). Given participants' comments regarding their lack of ability to expose SWD to real materials and situations, it is no surprise that the HLP on generalization and maintenance is a lower ranking one.

Teaching cognitive and metacognitive strategies to support learning and independence can be difficult for teachers to learn and implement in their classrooms (Klingner, Vaughn, & Boardman, 2015). Cognitive strategies assist the learners as they strive to understand and memorize instructional materials. Van Dijk and Kintsch (1983) provide an effective explanation for cognitive strategies:

> Thinking and problem solving are well-known examples: We have an explicit goal to be reached, the solution of a problem, and there may be specific operations, mental

> steps, to be performed to reach that goal. These steps are under our conscious control and we may be at least partly able to verbalize them, so that we can analyze the strategies followed in solving the problem. (p. 68)

In other words, cognitive strategies are mental habits or practices for achieving mental objectives such as understanding what is being read or solving a problem (Dole, Nokes, & Drits, 2014). Metacognitive strategies involve self-awareness, regulation, and assessment of one's cognitive actions (Wu & Peng, 2017). They allow students to track and evaluate their performance as they undertake cognitive tasks. Teaching cognitive and metacognitive strategies to students can be a time consuming, difficult, and complicated process. Teachers have had difficulty with explicitly teaching these strategies as well as finding a balance between teaching the content and teaching the strategies themselves (Dole, Nokes & Drits, 2014). In addition, it has been theorized that teaching cognitive and metacognitive strategies can be conceptually complex, because each strategy requires multiple steps for successful execution and if multiple strategies are put together, it becomes even more complex. Moreover, if teachers personally do not use cognitive and metacognitive strategies or are unaware of their personal strategic thinking processes, it becomes increasingly difficult to instruct students in how to use the strategies (Klingner et al., 2015). It is easy to understand why the HLP involving cognitive and metacognitive strategies was ranked lower by participants, given how complex and complicated teaching cognitive and metacognitive strategies can be to teach.

Using assistive and instructional technologies, according to the participants' comments, may not be implemented because of limited access. Multiple participants discussed their issues at their schools with limited access to technology. It is important to note, however, in spite of definitions and examples, there may have been a lack of understanding about *assistive and*

instructional technologies. While assistive technology has been found to be more likely to be used by students in FSC settings, it can also be beneficial to those in inclusive settings (Bausch, Ault, & Hasselbring, 2006). Limited access applies to technology that is costly, however many assistive and instructional technologies exist that are not cost prohibitive, and may already be available if the classroom has computers or iPads with internet access. Assistive technology can be any device, software, or equipment that helps students function in the classroom, including pencil grips, timers, and reading guides. Some technology can be expensive and unattainable, which supports the overall theme of limited access, however there may also be a lack of understanding regarding options for providing assistive and instructional technology on the part of the participants of this study.

Inconsistencies. There were some interesting inconsistencies across the participants' self-reported perceptions of HLPs in the area of instruction. In almost all of the instructional HLPs (11 out of 12), participants felt they were more knowledgeable than skilled. In addition to the overarching picture of all HLPs in instruction, there were some individual discrepancies that are worth mentioning.

The participants rank ordered their knowledge and skill in *providing scaffolded supports* as number six but their opportunities to implement *providing scaffolded supports* as two, moving it from the middle in the rank order to second from the very top, meaning most opportunities to implement. *Providing scaffolded supports* involves providing supports to students until they are able to complete a task on their own (McLeskey, 2017). Scaffolding can occur for academics or life skills. They can be planned or be used more spontaneously, in response to student needs. *Providing scaffolded supports* can be a powerful practice that enables students to move to higher levels of understanding and competence and can be implemented when working with students in

whole classes, smaller groups, or individually. *Providing scaffolded supports* can be easily implemented in any class setting (McLeskey, 2017), which may be why participants rank ordered the implementation higher than their knowledge or skill level.

Another interesting rank order worth noting is that of *using strategies to promote active student engagement.* Participants felt their knowledge of *promoting engagement* was rather low, placing it at eight. They felt their skill of *promoting engagement* was higher and in the top 4, while their opportunities to implement *strategies to promote active engagement* was number five. Research shows that teachers who are able to engage students had a greater influence on student gains than teachers who were unable to engage students (Mastropieri, Scruggs, & Mills, 2011). Furthermore, teachers who were able to engage students also exhibited certain behaviors, such as efficient use of time, active instructional approaches, minimal time spent on seatwork, positive reinforcement, and flexible grouping (Brownell, Leko, Kamman, & King, 2008). It is possible the participants rated their knowledge lower than their opportunities to implement *strategies to promote active engagement* because it is a skill that is used in conjunction with other teaching techniques, and the participants did not parcel out their specific knowledge of *engagement*.

Influences on HLPs

As discussed in Chapter 4, odds ratios were calculated to examine any potential association between instructional HLPs and licensure pathways or between instructional HLPs and classroom settings.

Licensure pathway. The pathway the participant took for licensure appeared to have some influence on the knowledge and skill level of some HLPs. Teachers who went through a traditional bachelor's, a post-baccalaureate, or master's teacher preparation program were all

more likely to be knowledgeable in *using explicit instruction* than those who went through alternative programs. Furthermore, participants who went through a post-baccalaureate program for teacher licensure were more likely to be knowledgeable in *teaching students to maintain and generalize new learnings across time and settings* and more knowledgeable *and* skilled in *identifying and prioritizing learning goals*. Unfortunately, there continues to be a significant need for qualified special educators with traditional teacher preparation programs unable to produce enough certified teachers to meet the demand (Mastropieri, Scruggs, & Mills, 2011). The situation has resulted in an alarming number of alternative certification programs nationwide. Many of the alternative certification programs do not meet standards of the field of special education established by the Council for Exceptional Children (CEC). Alternative programs may meet states' general teaching standards, without adhering to the standards for special education. This could result in potentially less skilled special education teachers (Mastropieri, Scruggs, and Mills, 2011). It stands to reason that special educators who are licensed through an alternative program may not feel as knowledgeable or skilled in many of the HLPs in instruction.

Classroom setting. Opportunities to implement HLPs in instruction appeared to be influenced by the classroom setting of the participant. Teachers in inclusive settings and those in Fully Self-Contained (FSC) settings were less likely to use some of the HLPs. The qualitative comments support this finding.

Teachers in inclusive settings indicated they had limited opportunities to *use assistive and instructional technologies* and *provide intensive instruction* because of their co-teaching situation. According to the literature, co-teaching is generally the most often implemented model for special education in inclusive settings, partially due to the federal and state mandates for

inclusive instruction as well as access to the general education curriculum for SWD (Cook, McDuffie-Landrum, Oshita, & Cook, 2011). However, schools' definitions of co-teaching may vary and not be consistent with the accepted definition. Co-teaching consists of two professionals, usually a special education teacher and a general education teacher, who work together to teach students with and without disabilities, in a single classroom (Cook & Friend, 1995). The two teachers have to work to blend their pedagogies as they collaboratively plan, instruct, assess, reteach, and manage behavior. That is the ideal description of co-teaching. However, co-teaching reality all too often involves less parity. The survey participants who wrote about co-teaching specifically described the general education teacher as the lead with the dominant role in their shared classroom. Unfortunately, research supports that special educators are often the less dominant co-teacher (Scruggs, Mastropieri, & McDuffie, 2007). "One teach-one assist" has been reported and observed as the most popular co-teaching model implemented, with the general educator as the lead teacher and the special educator as the assistant (Scruggs et al., 2007). Special education teachers face classroom control issues and reported that they had difficulty fitting into the general education teachers' classroom (Cobb Morocco & Mata Aguilar, 2002). Participants in the study expressed similar situations, including having difficulty *providing intensive instruction,* as well as difficulty convincing the general education co-teacher to use appropriate accommodations for SWD in the class and feeling unable to bring their special education expertise into the classroom. This is also supported by research (Antia, 1999; Buckley, 2005). Observational studies show that general education teachers typically favor whole-class strategies rather than individualized instruction (Anita, 1999; Buckley, 2005). In fact, just as participants in this study discussed, studies have shown that effective inclusive strategies were rarely used in co-taught classes (Hardy, 2001; M. A. Mastropieri et al., 2005). Special education

teachers in co-teaching situations often feel like the assistant with their expertise under-utilized and wasted (Mastropieri, et al., 2005).

Teachers in FSC settings indicated that the population they teach hinders their opportunities to implement *identifying and prioritizing learning goals, systematically designing instruction toward a specific learning goal, using strategies to promote active student engagement, providing positive and corrective feedback, and teaching students to maintain* and *generalize new learning across time and settings.* However, it is possible that their interpretation of some of the HLPs, such as active engagement, was not accurate. Comments included students' inability to engage verbally, however active engagement can occur nonverbally. The nonverbal use of response boards has been found to increase active responding for students with moderate and severe disabilities (Berrong, Schuster, Morse, & Collins, 2007). Research shows that teachers who serve students with moderate to severe disabilities often feel more prepared to complete IEPs and collaborate with team members and less prepared to support their students with teaching new skills (Ruppar, Neeper, & Dalsen, 2016). While the research on teachers' perceptions of their preparedness to teach students with moderate to severe disabilities is limited, it does indicate those teachers often have lower self-efficacy (Ruppar, et al., 2016). If the participants teaching in FSC settings had lower confidence in their abilities to instruct their students with moderate to severe disabilities, it would make sense they felt they had fewer opportunities to implement HLPs.

Sources for Information on Practices

As discussed in Chapter 4, 50% of the participants relied on professional colleagues for information on practices, which is consistent with previous studies that found teachers rate professional journals and college coursework as commonly less trustworthy than their own

colleagues (Landrum et al., 2007; Sciuchetti et al., 2016). This is concerning, as the percentage of special educators who are knowledgeable about research-based practices is low (Scuichetti, et al., 2016). In the present study, the Internet was the second highest source for strategies, which was also consistent with previous studies that found teachers rate the internet as high as a source for strategies (Scuichetti, et al., 2016). While there are many reliable and appropriate websites (e.g., What Works Clearinghouse, Best Evidence Encyclopedia, IRIS Modules) to use as a source for research-based practices, there are also many websites that endorse practices that are not supported by research (Scuichetti, et al., 2016). It was quite alarming that only six participants mentioned research websites as their first resource for practices and two mentioned university coursework. In addition, it was quite disconcerting that three participants wrote, "None or N/A," indicating they do not look for information on providing research-supported practices. Lack of knowledge on what comprises an effective practice is problematic because these practices have been shown to improve student outcomes (Cook et al., 2012). SWD achieve below their typical peers and failing to use effective practices would most likely result in less progress than if their teachers used appropriate sources to guide their teaching. Furthermore, federal legislation (Individuals with Disabilities Education Improvement Act, No Child Left Behind Act of 2001) requires the use of research-based practices (Cook et al., 2012) to ensure all students receive the best possible education.

Limitations

Given the exploratory nature of this study, there are a few limitations that must be addressed. The findings are restricted to those who completed the survey. Thirty-one surveys were incomplete and were not included in the data analysis. It is possible that participants may have felt uncomfortable with the topic, and therefore did not finish the survey. In addition, the

survey was administered in Hawai'i only, rather than nationwide. Furthermore, the participants were nominated and therefore had a higher likelihood of being perceived as more motivated and perhaps more effective, so the responses may not be typical of all special educators in Hawai'i. Another limitation was as a result of the participants who taught in FSC settings. It is unknown which, if any, of the participants in FSC settings received their licensure in a special education teacher preparation program designed specifically for teachers of students with low incidence disabilities. If the participants teaching in FSC settings went through any other licensure program, it is possible they were not as well prepared to teach students with more severe needs. Finally, survey research involves relying on the participants' responses without clarification. While miscommunication was minimized with the iterative process that was used to develop the survey, as well as the open-ended questions contained in the survey, there was still the possibility that the survey responses were prone to errors that may have impacted the interpretation of the responses.

Implications for Practice

As the United States is moving to co-teaching service delivery of special education services, our teachers are indicating they have fewer opportunities in an inclusive setting to implement research-based practices. The move to an integration of clinical experience and methods coursework, focused around the research-based HLPs, might help special educators incorporate more highly effective practices as they teach in inclusive settings. Understanding teacher perceptions can assist special education teacher preparation programs as they explicitly incorporate HLPs into the coursework. Moreover, centering teacher preparation programs around a smaller set of HLPs might be more feasible than a larger number of CEC standards (Pigman, 2019).

An interesting finding came to light from this study as a result of the participants who taught in FSC settings. Because the state of Hawai'i does not have a licensure program for teachers of students with low incidence disabilities at the undergraduate level, many of the participants who taught in FSC might have been prepared through a teacher preparation program for high incidence disabilities with some field work in FSC settings. This study may inform teacher preparation programs as they prepared teachers to teach in a variety of settings. Consideration may need to be given to the definition of some of the HLPs, such as *intensive instruction, engagement,* and *metacognitive strategies,* including how the HLPs are operationalized.

As previously discussed, the relationship between general education and special education co-teachers does not always include parity, according to research and according to the participants of the study. The study may help inform administrators as to the unique and specialized role of the special educator. HLPs have the potential of outlining the abilities and expertise of the special educator, helping to specify the contributions they are able to make to the co-teaching relationship. HLPs can assist in removing the ambiguity that can come with the role of a special educator and be used as a framework as special educators find their place in their school communities. Moreover, HLPs have the potential to support novice special educators in prioritizing and choosing effective instructional practices (Billingsley et al., 2019).

The HLPs were intended to be a solid starting point, remaining open to critique and assessment by the field of special education. The authors felt the HLPs should be "collectively owned, critically evaluated, and refined by teacher educators, researchers and practitioners (McLeskey et al., 2019, p. 235)." This study may help inform the HLP working group as they continue to refine the HLPs for use with special education teacher preparation programs.

Practicing special educators should use the HLPs with a critical eye, collecting data and adjusting their instruction accordingly, which could ultimately provide valuable and objective feedback to the working group as to the practicality of implementing the HLPs within the myriad of settings in which special educators teach.

The accessibility and usability of a practice is vital in order for successful classroom implementation and sustainability to occur (Landrum et al., 2007). While teachers may not always be informed or aware of research-based practices (Gersten et al., 2000), they do indicate being knowledgeable and skilled in the majority of the HLPs in instruction in this study. This study may assist special education teacher preparation programs as they adjust the coursework and clinical experience to include HLPs. Teacher education scholars from multiple disciplines are all in agreement that teacher preparation should include systematic instruction, center around clinical practice, and include the development of a set of highly effective practices (HLPs). In addition, pedagogy is crucial as candidates are taught to implement practices with fidelity and fluency (Maheady, Patti, Rafferty, & del Prado Hill, 2019). Because special education teacher preparation programs focus on the practice of special educators, their task involves creating opportunities for teacher candidates to master these HLPs through the cycle of modeling, feedback, and adjustment (Sayeski, 2018).

This study may help inform administrators of the unique role of the special educator as well as the importance of extra planning time required for effective collaboration with general education counterparts. Special educators need to be able to implement practices in their classroom without investing a lot of time (Landrum et al., 2002). Multiple participants in this study expressed their frustration with the lack of time they had, either as a new teacher learning how to navigate the field of special education, or as an experienced teacher with too many

responsibilities but not enough time in the day. This is a common complaint in the research (Mastropieri et al., 2011; Morrison, 2010), especially for special educators who are co-teaching with one or more general education partners.

Finally, this study may be used to inform special educators about HLPs and assist them in highlighting areas of strength and opportunities for growth. Teacher beliefs guide instructional decisions (Pajares, 1992) and beliefs can become evident when teachers engage in self-reflection (Osipova, Prichard, Boardman, Kiely, & Carroll, 2011). Moreover, self-reflection and directing teachers' attention on their practices based on student results may lead to a positive change in their instructional decisions, ultimately resulting in an improvement in student gains (Osipova et al., 2011). The HLPs can be used as a guide for teachers as they engage in self-reflection, helping them determine the application of effective practices within their instruction.

Recommendations for Future Research

High-leverage practices have only recently been developed for special education. Because of this, little research has been conducted on special educators' perceptions. By design, this study focused on special education teachers' perceptions and consisted of self-reports. However, self-reports are not always valid because some educators might under- or over-estimate their knowledge or use of certain practices. Future research should be corroborated through reliable observational data. For example, teacher preparation programs could create observational checklists around the HLPs. They could then be assured that preservice teachers are both knowledgeable, skilled, and have opportunities to practice the HLPs before they become licensed teachers. Observational studies would also help determine how teachers are implementing HLPs. For example, field supervisors could use their observations of preservice or teachers to determine the frequency with which they use HLPs when delivering their lessons.

This study concentrated on HLPs in the area of instruction. HLPs were also developed in the areas of assessment, collaboration, and social/emotional/behavioral. Future research should include studies on knowledge, skills, and opportunities for implementation in those areas as well. Finally, the participants for this study were located in Hawai'i. Future research should include participants nationwide, to give more insight into the perceptions of HLPs. Finally, this study concentrated on practicing special educators' perceptions of HLPs. The HLPs in the area of instruction, however, are also applicable to general education teachers. effective practices, therefore future research should include general education teachers' perceptions of HLPs in the area of instruction, adding to the research on effective practices for use in inclusive settings.

Conclusion

In the initial special educator standards from the Council for Exceptional Children (CEC), standard 5.0 discusses the importance of being able to find, adapt, and implement a variety of research-based instructional strategies in order to effectively teach SWD. Moreover, providing highly effective, research-based instruction responsive to the unique needs of SWD is vital for quality outcomes to occur (Leko, Brownell, Sindelar, & Kiely, 2015). However, the emphasis on using research to guide practice has done little to narrow the research-to-practice gap. High-Leverage Practices (HLPs) were developed by CEC as a list of research-based, frequently occurring, highly effective practices special educators should be able to successfully implement when they enter the teaching profession.

The results of this study suggested that special educators in Hawai'i are knowledgeable and skilled in the majority of the HLPs, however there are numerous barriers preventing them from implementing the practices on a regular basis. Those barriers include time, co-teacher control, fully self-contained settings, and lack of support or resources.

It is promising for the field of special education that special educators are knowledgeable, skilled, and have opportunities to implement the majority of HLPs in instruction because research has established that improving the practice of teachers is the most important way to increase the outcomes of SWD (McLeskey, 2019). HLPs have the potential of being the bridge between teacher preparation programs and public schools, with the eventual intent of improving the preparation of teachers, subsequently improving the outcomes of SWD (McLeskey, 2019).

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APPENDICES

APPENDIX A

QAS-99

The Question Appraisal System (QAS-99) was developed to identify and edit potential miscommunication and other problems with survey questions. It consists of a checklist of eight steps for each survey question. Each step allows for the assessor to mark the "YES" box if there is a potential survey question issue (Willis & Lessler, 1999).

INSTRUCTIONS *Use one form for EACH question to be reviewed.* *In reviewing each question:* *1) WRITE OR TYPE IN THE QUESTION NUMBER. ATTACH QUESTION.*	
Question number or question here:	
***2)** Proceed through the form—Circle or highlight YES or NO for each Problem Type (1a…8).* ***3)** Whenever a YES is circled, write detailed notes that describe the problem.*	
STEP 1 – READING: Determine if it is difficult for the interviewers to read the question uniformly *to all respondents.*	
*1a. **WHAT TO READ:** Interviewer may have difficulty determining what parts of the question should be read.*	*YES* *NO*
*1b. **MISSING INFORMATION:** Information the interviewer needs to administer the question is not contained in the question.*	*YES* *NO*
*1c. **HOW TO READ:** Question is not fully scripted and therefore difficult to read.*	*YES* *NO*
STEP 2 – INSTRUCTIONS: Look for problems with any introductions, instructions, or explanations from the respondent's point of view.	
2a. CONFLICTING OR INACCURATE INSTRUCTIONS, introductions, or explanations.	*YES* *NO*
*2b. **COMPLICATED INSTRUCTIONS**, introductions, or explanations.*	*YES* *NO*
STEP 3 – CLARITY: Identify problems related to communicating the intent or meaning of the question to the respondent.	
*3a. **WORDING:** Question is lengthy, awkward, ungrammatical, or contains complicated syntax.*	*YES* *NO*
3b. TECHNICAL TERM(S) are undefined, unclear, or complex.	*YES* *NO*
3c. VAGUE: There are multiple ways to interpret the question or to decide what is to be included or excluded.	*YES* *NO*
3d. REFERENCE PERIODS (e.g., "during the past month") are missing, not well specified, or in conflict.	*YES* *NO*
STEP 4 – ASSUMPTIONS: Determine whether there are problems with assumptions made or the underlying logic.	
*4a. **INAPPROPRIATE ASSUMPTIONS** are made about the respondent or about his/her* *living situation.*	*YES* *NO*
*4b. **ASSUMES CONSTANT BEHAVIOR** or experience for situations that vary.*	*YES* *NO*

4c. ***DOUBLE-BARRELED:*** *Contains more than one implicit question.*	*YES* *NO*
STEP 5 – KNOWLEDGE/MEMORY: Check whether respondents are likely to not know or have trouble remembering information.	
5a. ***KNOWLEDGE*** *may not exist: Respondent is unlikely to know the answer to a factual question.*	*YES* *NO*
5b. ***ATTITUDE*** *may not exist: Respondent is unlikely to have formed the attitude being asked about.*	*YES* *NO*
5c. ***RECALL*** *failure: Respondent may not remember the information asked for.*	*YES* *NO*
5d. ***COMPUTATION PROBLEM:*** *The question requires a difficult mental calculation.*	*YES* *NO*
STEP 6 – SENSITIVITY/BIAS: Assess questions for sensitive nature or wording, and for bias.	
6a. ***SENSITIVE CONTENT*** *(general): The question asks about a topic that is embarrassing, very private, or that involves illegal behavior.*	*YES* *NO*
6b. ***SENSITIVE WORDING*** *(specific): Given that the general topic is sensitive, the wording should be improved to minimize sensitivity.*	*YES* *NO*
6c. ***SOCIALLY ACCEPTABLE*** *response is implied by the question.*	*YES* *NO*
STEP 7 – RESPONSE CATEGORIES: Assess the adequacy of the range of responses to be recorded.	
7a. ***OPEN-ENDED QUESTION*** *that is inappropriate or difficult.*	*YES* *NO*
7b. ***MISMATCH*** *between question and response categories.*	*YES* *NO*
7c. ***TECHNICAL TERM(S)*** *are undefined, unclear, or complex.*	*YES* *NO*
7d. ***VAGUE*** *response categories are subject to multiple interpretations.*	*YES* *NO*
7e. ***OVERLAPPING*** *response categories.*	*YES* *NO*
7f. ***MISSING*** *eligible responses in response categories.*	*YES* *NO*
7g. ***ILLOGICAL ORDER*** *of response categories.*	*YES* *NO*
STEP 8 – OTHER PROBLEMS: Look for problems not identified in Steps 1-7.	
8. ***OTHER PROBLEMS*** *not previously identified.*	*YES* *NO*

APPENDIX B
High-Leverage Practices Survey Instrument

Welcome to the High-Leverage Practices research study

Mahalo nui loa for participating in this survey. I am so appreciative, because the information you provide will be invaluable in helping prepare future teachers to teach the keiki of Hawai‘i.

The purpose of this survey is to investigate your perspectives on high-leverage instructional practices.

This investigation is being conducted by Cindy Farley at the University of Hawaii. You are invited to participate in this survey because you are a licensed special educator in Hawai‘i.

Your participation is voluntary. You may choose not to participate. If you decide to participate, you may withdraw at any time.

If you decide not to participate in this survey or if you withdraw from participating at any time, you will not be penalized.

The process involves completing an online survey that will take 15-20 minutes. Your responses will be confidential and I will not collect identifying information such as your name, email address, or IP address.

Your information will be kept confidential. All data is stored in a password protected electronic format. To help protect your confidentiality, the surveys will not contain information that will personally identify you.

By clicking the button below, you acknowledge that your participation in the study is voluntary and you are aware you may terminate your participation in the study at any time and for any reason.

Please note that this survey will be best displayed on a laptop or desktop computer. Some features may be less compatible for use on a mobile device.

To what extent are you **knowledgeable** in:

Click here for definitions and examples for each of the HLPs listed below

Knowledgeable				
To what extent are you **knowledgeable** in:	Not Knowledgeable	Slightly Knowledgeable	Moderately Knowledgeable	Very Knowledgeable
1. **Identifying and prioritizing** learning **goals**				
2. Systematically **designing instruction** toward a specific learning goal				
3. **Adapting** curriculum tasks and materials for				
4. Teaching cognitive and metacognitive **strategies** to support learning and independence				
5. Providing **scaffolded supports**				
6. Using **explicit instruction**				
7. Using **flexible grouping**				
8. Using strategies to promote **active student engagement**				
9. Using **assistive and instructional technologies**				
10. Providing **intensive instruction**				
11. Teaching students **to maintain and generalize** new learning across time and settings				
12. Providing positive and corrective **feedback**				

To what extent are you **skilled** in:

Click here for definitions and examples for each of the HLPs listed below

Skilled				
To what extent are you **skilled** in:	Not Knowledgeable	Slightly Knowledgeable	Moderately Knowledgeable	Very Knowledgeable
1. **Identifying and prioritizing** learning **goals**				
2. Systematically **designing instruction** toward a specific learning goal				
3. **Adapting** curriculum tasks and materials for				
4. Teaching cognitive and metacognitive **strategies** to support learning and independence				
5. Providing **scaffolded supports**				
6. Using **explicit instruction**				
7. Using **flexible grouping**				
8. Using strategies to promote **active student engagement**				
9. Using **assistive and instructional technologies**				
10. Providing **intensive instruction**				
11. Teaching students **to maintain and generalize** new learning across time and settings				
12. Providing positive and corrective **feedback**				

To what extent do you have **opportunities to implement:**
Click here for definitions and examples for each of the HLPs listed below

Implement				
To what extent do you have the **opportunity to implement**	Never	Rarely	Sometimes	Often
1. **Identifying and prioritizing** learning **goals**				
2. Systematically **designing instruction** toward a specific learning goal				
3. **Adapting** curriculum tasks and materials for				
4. Teaching cognitive and metacognitive **strategies** to support learning and independence				
5. Providing **scaffolded supports**				
6. Using **explicit instruction**				
7. Using **flexible grouping**				
8. Using strategies to promote **active student engagement**				
9. Using **assistive and instructional technologies**				
10. Providing **intensive instruction**				
11. Teaching students **to maintain and generalize** new learning across time and settings				
12. Providing positive and corrective **feedback**				

APPENDIX C

High-Leverage Practices Survey Instrument, Potential Open-Ended Questions

You reported that you are moderately skilled in (*name of HLP)* but never have the opportunity to do so. Please explain what those barriers are and what might allow you more opportunities for implementation.

You reported that you are moderately skilled in (*name of HLP)* but rarely having the opportunity to do so. Please explain what those barriers are and what might allow you more opportunities for implementation.

You reported being very skilled in (*name of HLP)* but report never having the opportunity to do so. Please explain what those barriers are and what might allow you more opportunities for implementation.

You reported being very skilled in (*name of HLP)* but report rarely having the opportunity to do so. Please explain what those barriers are and what might allow you more opportunities for implementation.

You reported being skilled in (*name of HLP)* and sometimes have the opportunity to do so. Please explain any barriers that kept you from selecting "often" when addressing the opportunities you have to implement.

APPENDIX D

Demographics

How many years have you been employed as a special education teacher?

- 0-5 years
- 6-10 years
- 11-15 years
- 16-20 years
- 21-25 years
- 26-30 years
- More than 30 years

What is your highest completed educational level?

- Bachelor's degree
- Bachelor's + Post-Baccalaureate Program
- Master's degree
- Doctorate

How did you obtain your special education license?

- Traditional undergraduate teacher preparation program
- Master's degree program
- Post-baccalaureate program
- Alternative licensure program (please explain)
- Emergency license (please explain)
- I do not have a license in special education
- Other (please explain)

What level do you teach?

- Preschool
- Elementary
- Middle/Intermediate
- Secondary

Please list all teaching licenses you hold:

What is the setting of your classroom (mark all that apply)?

- Inclusion
- Resource/ pull out
- Fully Self Contained
- General Education
- Other (please explain)

APPENDIX E

High-Leverage Practices Definitions and Examples

High-Leverage Practice	Definition	Example
1. Identifying and prioritizing long and short term learning goals	Developing appropriate instructional goals that are aligned with standards and design instruction that enables all students to reach those goals, regardless of their learning challenges	Learning goals include those for students' IEPs as well as for specific subjects and may be on grade level or out of level as teachers link their present level of performance, strengths, and needs.
2. Systematically design instruction toward a specific learning goal	Setting clear goals, logically sequencing skills, and helping students make connections	Teachers activate students' prior knowledge and show how each lesson "fits" with previous ones. Ongoing changes (e.g., pacing, examples) occur throughout the sequence based on student performance.
3. Adapting curriculum tasks and materials for specific learning goals	Making content accessible for a range of diverse learners	Accommodations can include making substitutions for text material such as audiotaping or reading aloud, highlighting key information by developing study guides/study guides, or providing graphic organizers.
4. Teaching cognitive and metacognitive strategies to support learning and independence	Teaching steps within cognitive strategies, supports development, and provides examples and non-examples	Cognitive and metacognitive strategies may include SRSD, mnemonic strategies, self-management/ self-monitoring strategies, SLANT, and text interactions strategies (e.g., summarizing, identifying main idea, and text structure).

5. Providing scaffolded supports	Supports provided to enable students to solve problems or achieve goals that could not be done without assistance, with teachers gradually releasing or transferring responsibility to the students as they become more capable	Scaffolding includes providing more familiar examples, helping students use graphic organizers and other tools, using technology, and scaffolding through dialogue like modeling and thinking aloud.
6. Using explicit instruction	Guiding students through the learning process with clear statements about purpose, expectations, instructional target, and supported practice with feedback	Teachers use explicit language as they model and scaffold the specific skill or concept.
7. Using flexible grouping	Purposefully using small groups of same or mixed ability, pairs, whole-class, and individual instruction	Grouping may include homogeneous and heterogeneous small groups, pairs, whole class, and individualized instruction.
8. Using strategies to promote active student engagement	Increasing opportunities for student response, increasing time on task	Strategies for engagement include building positive relationships, connecting learning to students' lives, using a variety of strategies to increase student response, and students' value in school.
9. Using assistive and instructional technologies	Evaluating student needs for technology, using technology within content-area instruction, and using UDL	Technology may include augmentative and alternative communication devices, low technology options like pencil grips, and the universal design for learning framework when planning, implementing, and assessing instruction.
10. Providing intensive instruction	Using individualized instruction, determined by data, and increasing in intensity as needed based on individual student need	Usually a Tier 3 intervention, intensive instruction is provided with the framework of data-based individualization and is highly individualized for students with severe and

		persistent learning needs.
11. Teaching students to maintain and generalize new learning across time and settings	Choosing strategies for maintenance and generalization at the beginning of teaching new academic and/or social skills and purposefully and systematically building them into the program rather than assuming it will automatically occur	Maintenance and generalization strategies may include using numerous examples during instruction, including schedules of reinforcement, frequent material reviews, and teaching skills that are reinforced naturally in environments outside of the classroom.
12. Providing positive and corrective feedback	Providing specific feedback with key information about progress toward a learning goal, to guide student learning and behavior, while increasing motivation, engagement and independence.	Feedback may be verbal, nonverbal, or written and should be timely, genuine, contingent, meaningful, age appropriate, and ongoing until the learning goal is reached.