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Early-Career Special Education Teachers' Knowledge of High-Leverage Practices

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Abstract

The most effective way to increase students' academic performance is to improve the instructional practices of their teachers. Effective, research-based instruction responsive to individual students' unique needs is imperative for quality outcomes, particularly for students with disabilities. The high-leverage practices (HLPs; Collaboration, Assessment, SEL/Behavior, and Instruction) developed by the Council for Exceptional Children are a set of practices fundamental to student success that early-career teachers should learn, implement, and teach. This exploratory descriptive study was an of examination early-career teachers' knowledge and use of the 22 HLPs.

The study results indicated that similar percentages of early-career alternative-route-to-licensure and traditionally prepared teachers know and use the 22 HLPs, a finding also true for elementary and secondary teachers. Where teachers learned the HLPs showed more variation across subgroups. Focus group interviews showed that the label of HLP was unfamiliar to many of the teachers, who were more aware of evidence-based practices. Many of the early-career teachers' comments related to best practices indicated more time spent in survival or management mode than engaging in strong instructional practices. The findings indicated recommendations for practice and future research.

Improving teacher preparation, professional development, and classroom implementation of HLPs could be a significant tool for improving student outcomes and closing the research-to-practice gap. By learning and teaching the four categories of the 22 HLPs, teacher educators could create preparation programs that clearly address what preservice teachers will practice in their field experiences and professions. Future

researchers could build upon this study's self-reported data with observations, using HLP checklists or matrices to measure how frequently early-career teacher implement HLPs. Expanding the population to include seasoned special education teachers and educators from multiple school districts would provide greater insight into teachers' knowledge and use of HLPs and present more generalizable results.

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This work, and all of my work, is dedicated to my husband, Erik, and our four boys, Austin, Johnny, Ben, and William. Cheers to a life of love and endless possibilities. Thank you for supporting me through this crazy journey.

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Chapter 1: Introduction

Improving educator effectiveness is considered the most direct approach to improving outcomes for students with low achievement and disabilities. According to McLeskey and Brownell (2015), teachers have a more significant impact on student achievement than other school influences, particularly for students with disabilities. Ensuring teachers leave their teacher preparation programs with the knowledge, skills, and abilities needed to teach in challenging classrooms has been a focus of researchers and school administrators since the passage of the Individuals with Disabilities Act (2004).

The Importance of a Skilled Special Education Teacher

A teacher's qualifications, knowledge, and skills impact student learning significantly more than any other factor (Darling-Hammond, 2009), a finding that is particularly true for students identified with disabilities. These students need qualified teachers who understand their learning differences and can help them move forward in meaningful ways. Even more than their general education peers, students with disabilities depend on qualified teachers to provide effective instruction and learning practices (Bettini et al., 2016). Thus, improving student learning requires improving teacher learning. To be effective, special education teachers must understand how to reach students with complex learning, emotional, and behavioral needs.

Collaboration

Special education teachers need to understand how to collaborate with their colleagues and the families of the students in their care. Collaboration allows teachers,

service providers (such as occupational and speech therapists), administrators, and families to combine their strengths and wisdom to meet the needs of students (Cook & Friend, 2010; Gentry & Tay, 2021). Coordinating the communication and meetings needed to collaborate effectively can be a challenge for many educators, particularly early-career educators who are just learning their profession. Compounding this challenge, preservice teachers might not have received explicit instruction and opportunities to practice collaborating with other professionals and families (Gentry & Tay, 2021). Cortez et al. (2009) suggested that the best way to learn to be an effective collaborator is to practice collaborating and receiving feedback. Collaboration allows professionals with different areas of expertise to work together to benefit the students in their care.

Assessment

Early-career educators need to be able to assess their students' learning and create impactful instruction to move the students forward in their learning. Student assessment, a critical aspect of the teaching and learning process (Fisher & Bandy, 2019), enables teachers to measure their effectiveness by linking student learning and performance to learning objectives. Teachers can make effective teaching choices and remove ineffective strategies with this knowledge. With assessment, teachers can document that meaningful learning has occurred in the classroom (Wiggins et al., 2005). Without this vital step, early-career teachers and their students could engage in activities without effectively moving student learning forward.

Social-Emotional/Behavioral Learning

Effective teachers establish a learning environment that is consistent, organized, and respectful (McLeskey et al., 2019). To create a productive classroom environment, teachers engage in practices that facilitate students' academic achievements and increase appropriate social opportunities (Riccomini et al., 2017; Taylor & Bhana, 2021). Classroom management is essential to successful teaching (Taylor & Bhana, 2021). There is a direct link between a teacher's inability to manage student behavior and a teacher's lack of job satisfaction (Myers et al., 2017; Taylor & Bhana, 2021), which can lead to higher teacher turnover rates (Ingersoll & Smith, 2004; Myers et al., 2017). For classroom management techniques to be successful, however, educators need to create learning environments that are positive and conducive to the advancement of all students. When classroom management techniques are successful, students can engage with the material, increasing their academic success opportunities.

Instruction

The work of teaching students identified with a disability begins with well-designed instruction (Riccomini et al., 2017). Special education teachers must be aware of the general education curriculum, appropriate standards, learning progressions, evidence-based practices (EBPs), and individualized education plans (IEPs) of the students they serve (McLeskey et al., 2019). When teachers deliver instruction with fidelity, they can maximize student learning.

Well-qualified teachers can impact all students, especially those who struggle in school and pose instructional and behavioral challenges (McLeskey et al., 2018; Windschitl et al., 2012). Teachers are responsible for imparting content knowledge while

enhancing students' executive functioning and learning ability. Teachers have a greater impact on student achievement than other school influences, such as class size, parent involvement, or school facilities (McLeskey & Brownell, 2015). The most direct approach to improving outcomes for low-achieving students is improving the effectiveness of their teachers.

Struggles of Early-Career Teachers

Early in their careers, teachers struggle with the complexity of teaching while navigating classrooms and school environments (Darling-Hammond & Baratz-Snowden, 2007). Preservice teachers often do not learn how to use research-based practices in the classroom, and much of what preservice teacher education programs teach does not readily transfer to the classroom setting (McLeskey & Billingsley, 2008). The most often-reported struggles include handling student discipline, maintaining student engagement with the curriculum, meeting students' individual needs, and identifying what to teach and how to teach it (Bishop et al., 2010). Facing these complex issues early in their careers might lead teachers to focus on their survival rather than their students' overall outcomes. Early-career teachers might learn to operate as if they are triaging the activities in the classroom and not always focused on their students' needs (Trivedi, 2021).

The first 3 years of a teacher's career can negatively affect student achievement (Rivkin et al., 2005). Teachers and students struggle with a steep learning curve. Special education teachers stay in the field for an average of 3 to 5 academic years before leaving (Theoharis & Fitzpatrick, 2013), often due to feeling overwhelmed, ineffective, and unsupported (Ingersoll & Smith, 2004; Smith & Ingersoll, 2004). Through surveys and case studies, researchers have provided compelling insights into the struggles of

educators new to teaching (Fisher, 2011). Better preparation in preservice teacher knowledge and instructional practice in colleges, universities, and alternative route to licensure (ARL) programs could help early-career teachers rapidly improve their skills, increasing student achievement and teacher retention.

Teacher Preparation

Teachers come to the classroom through different channels, including traditional 4-year university teacher education degrees or ARL programs. In general, teacher preparation refers to a state-approved course of study that, once completed, shows the preservice teacher has met all state requirements for licensure to teach elementary or secondary school (Jang & Horn, 2017). Created to help address teacher shortages, ARL programs are effective means of increasing the number of teachers; however, concerns have arisen about whether the programs' efficiency might sacrifice quality in terms of teacher skills, knowledge, and student learning outcomes (Darling-Hammond & Youngs, 2002; Jang & Horn, 2017). There has been extensive research comparing traditionally prepared teachers with ARL teachers. Most studies show that compared to ARL programs, traditional teacher preparation programs produce better-prepared teachers with greater instructional knowledge, self-efficacy, and retention (Darling-Hammond & Youngs, 2002; Jang & Horn, 2017).

Differences Between Elementary and Secondary Educators

In this study, elementary education represents Grades K–5, and secondary education represents Grades 6–12. There are some important distinctions between these levels. Elementary school teachers generally teach all subjects to the same group of students throughout the school day. Shippen et al. (2011) noted that the elementary

classroom structure tends to be more student-driven. Generally, elementary students are learning how to learn, so there could be more strategies for learning present (Goldring et al., 2013; Ysseldyke et al., 1988). In secondary schools, students rotate between classes, with expectations for them to be more independent learners. Secondary teachers should be experts in the subjects they teach, which often results in these classrooms becoming content-driven (Shippen et al., 2011). The licensure for these levels varies in the amount of pedagogy versus subject matter knowledge the preservice teachers should master. Elementary and secondary teachers do not receive the same preparation, and the schedules and constraints of the students they serve change how they teach. Although the licenses for elementary and secondary educators are different, special education teachers are generally licensed to teach at both the elementary and secondary levels.

Research and Effective Instructional Practices

Effective instructional practices provide students with the best education to meet their educational goals (Cook & Cothren Cook, 2013). Scholars have worked to identify many effective teaching practices to address the academic, social, emotional, and behavioral needs of students with disabilities, strategies commonly known as EBPs. These are specific instructional techniques with research that supports their effectiveness (Cook & Cothren Cook, 2011; Cook et al., 2013). EBPs are practices found to be effective by the most rigorous and reliable researchers and adopted and validated by the Institute of Education Sciences (IES). Because of this rigorous and validated research, EBPs have significant potential to affect meaningful positive change in education, especially for students at risk of failure and those identified with learning differences and disabilities (Cook & Cothren Cook, 2011; Torres et al., 2012). However, classroom

implementation of these practices is difficult, and good models are scarce (Jones, 2009). EBP implementation and validation typically occurred in clinical settings and randomized control trials, not in typical classrooms. Researchers do not design their research for practical classroom application (Carnine, 2000) or consider the implications of their EBP studies. Further, classroom practitioners often lack the time or understanding to determine how to use the findings in their classrooms. As a result, there is a gap between researcher knowledge and practices and teachers' classroom strategies to improve student learning.

Research-to-Practice Gap

This gap between researchers' identification of effective strategies and fidelity descriptions and educators' ability and willingness to implement the EBPs in the classroom is known as the research-to-practice gap. Although researchers might find an EBP effective at solving an instructional problem, teachers could struggle to adapt the EBP for practical use in the classroom. As a result, teachers might change important features of the EBP or declare implementation too challenging and resort to practices they already know. It is crucial to address the gap between research and practice and prepare teachers to blend research and practice in their daily work. Research should be the driving force in educational practice (Burns & Ysseldyke, 2009), but preservice teachers must learn how, when, and why to use specific effective practices.

There are various barriers to educators implementing EBPs in classrooms, perhaps most significantly that researchers study the practices in prescribed settings. Administrators expect teachers to implement EBPs as prescribed for maximum benefit; however, teachers work in classrooms that are diverse and complex. It is difficult to take

practices designed and studied in a research setting and generalize them to a classroom. Teachers want explicit research practices with direct applications that are simple to implement and improve student outcomes (Landrum et al., 2002). Educators' reasons for not using research to guide instructional practice include (a) they feel little attention was given to the needs of the practitioners, (b) the research findings were inaccessible, and (c) the practices are not designed to work in real-world settings (Jones, 2009).

Using EBPs with fidelity in a classroom setting has had many challenges. Classrooms are complex environments not conducive to implementing strategies that are effective in controlled research settings. A specialized reading program tested and studied in randomized control groups with specific parameters could be difficult to generalize to a busy school environment. Alternately, a preservice teacher could spend time becoming an expert in an EBP during second-grade student teaching and then earn a job teaching sixth grade. The EBP that was powerful for second-grade students might not serve the needs of the sixth-grade curriculum.

The concept and design of special education complicate the generalizability of research and the implementation of practices identified as evidence-based (Kozleski, 2017; Odom et al., 2005). Special education teachers must individualize instruction based on the student's needs (Jones, 2009). Many EBPs are inflexible and designed for implementation in a specific way with a specific type of learning need, which is incompatible with an individualized learning and behavior plan.

EBPs are often too rigid for the nuanced classroom environment. Even if teachers learn EBPs in their preservice training programs, generalizing these specific practices to a classroom setting is often beyond the capabilities of early-career educators in survival

mode (Jones, 2009). As a result, new teachers are less likely to adopt EBPs that have not been explicitly taught and practiced in their preservice education programs (Cook & Cothren Cook, 2013; Jones, 2009). Teacher preparation overwhelmingly occurs in settings removed from the practice of teaching; in addition, most coursework emphasizes reflection, investigation, and knowing about practice rather than how to use practices in classrooms (Brownell et al., 2019). Effective teaching involves more than just choosing the best EBP. Even the most successful interventions, practices, or teaching techniques can have little impact on student outcomes if implemented through ineffective teaching (Odom et al., 2005; Torres et al., 2012).

The Introduction of High-Leverage Practices

High-leverage practices (HLPs) build on the belief that effective instructional practices provide students with the best possibility of meeting their educational goals (McLeskey et al., 2019). High-leverage teaching practices are a means of getting best practices and EBPs into classrooms. HLPs are a set of practices integral to the support of student learning and systematically taught, learned, and implemented by those entering the teaching profession (McLeskey et al., 2019). McLeskey et al. (2017) defined HLPs as practices useful for leveraging student learning across content areas, grade levels, and student abilities. HLPs are specific teaching practices identified as fundamental to supporting student learning. Not rigid and prescribed like EBPs, HLPs are flexible and implementable across grade levels and student learning needs.

HLPs are research-supported for fostering student learning and behavior and broadly applicable across content and disability areas, with frequent use by teachers in the classroom; thus, they are the likeliest strategies to succeed. HLPs are especially

powerful because they are specific practices that new teachers can implement (Windschitl et al., 2012). Another term for HLPs is the beginner's repertoire. The four HLP categories (Collaboration, Assessment, Social-Emotional Learning and Behavior, and Instructional Practices) with 22 specific HLPs have shown the most impact in enhancing learning for all students. Unlike EBPs, HLPs begin with an active verb, describing what educators should do instead of the name of the instructional strategy, such as direct instruction. Following is a list of HLPs for special educators.

Collaboration

1. Collaborate with professionals to increase student success.
2. Organize and facilitate effective meetings with professionals and families.
3. Collaborate with families to support student learning and secure needed services.

Assessment

4. Use multiple sources of information to develop a comprehensive understanding of a student's strengths and needs.
5. Interpret and communicate assessment information with stakeholders to collaboratively design and implement educational programs.
6. Use student assessment data, analyze instruction practices, and make necessary adjustments that improve student outcomes.

Social-Emotional/Behavioral

7. Establish a consistent, organized, and respectful learning environment.
8. Provide positive and constructive feedback to guide students' learning and behaviors.

9. Teach social behaviors.
10. Conduct functional behavioral assessments to develop individual student behavior support plans.

Instruction

11. Identify and prioritize long- and short-term learning goals.
12. Systematically design instruction toward a specific learning goal.
13. Adapt curriculum tasks and materials for specific learning goals.
14. Teach cognitive and metacognitive strategies to support learning and independence.
15. Provide scaffolded support.
16. Use explicit instruction.
17. Use flexible grouping.
18. Use strategies to promote active student engagement.
19. Use assistive and instructional technologies.
20. Provide intensive instruction.
21. Teach students to maintain and generalize new learning across time and settings.
22. Provide positive and constructive feedback to guide students' learning and behavior.

A shift to teaching HLPs starts with teacher educators. These professionals can reduce the research-to-practice gap by ensuring that preservice teachers know and can competently perform the most impactful teaching strategies, creating positive and significant results in student learning and outcomes (Jones, 2009). Providing preservice

teachers with multiple opportunities to learn and practice using HLPs can help beginning teachers implement the best practices that result in more powerful classroom practice. McLeskey and Brownell (2015) suggested that teacher education programs focus on teaching HLPs to preservice teachers to create educators ready to improve outcomes for all students, including low-achieving learners in high-poverty schools. Windschitl et al. (2012) argued that HLPs should be student learning practices systematically taught, learned, and implemented by preservice teachers entering the profession. Creating early-career teachers well versed in and able to perform HLPs could close the research-to-practice gap.

Problem Statement

McLeskey and Brownell (2015) have consistently maintained that teachers have a greater impact on student achievement than other school influences. Skillful teachers matter. The significant teacher shortage, particularly in special education, puts students at risk of not meeting their instructional and behavioral goals (Bryner, 2021). Many special education teachers are early-career teachers placed in classrooms to fill the teacher shortage. Teaching students with disabilities is challenging, and teachers need skills in collaboration, assessment, social/emotional and behavior, and instruction; however, developing skills in these areas could be overwhelming for novice teachers. Therefore, it is essential to support early-career special education teachers and provide the instructional and social-emotional and behavioral skills they need to meet the challenges they face.

Teacher preparation programs should prepare early-career teachers for the complex responsibilities of teaching students with disabilities. Focusing preservice

teacher instruction on HLPs could provide a structure for developing skillful and prepared teachers. McLeskey et al. (2017) argued that appropriately preparing early-career teachers to enter the classroom and implement HLPs could significantly improve student outcomes and meet the challenge of closing the research-to-practice gap. Due to the recent establishment of HLPs (Council for Exceptional Children [CEC], 2016) in special education, research on teacher knowledge and the use of HLPs is nascent. The lack of scholarship suggests an opportunity to explore McLeskey's idea that the place to teach HLPs is in preservice teacher preparation. If McLeskey is correct, early-career special education teachers should know the 22 HLPs.

Purpose

The purpose of this study was to examine which of the 22 special education HLPs early-career special education teachers report knowing and using in their classrooms. A consideration was that early-career special education teachers might use effective practices but not know the practice is an HLP. This study was a survey of early-career teachers from traditional teacher education programs and ARL programs. Focus groups were means to better understand what effective strategies teachers know and use in their classrooms. In the focus groups, teachers shared their effective classroom practices, even if they were unaware the practice was an HLP. The focus group discussions showed the issue of instructional vocabulary. Although early-career teachers might not know the name of a strategy, the focus group allowed them to describe how they used the practice, which was important. The study results indicate recommendations for preservice teacher preparation, regardless of the venue: A traditional teacher education program or an ARL

program. Further, the findings could inform teacher education practices and what professional development opportunities should be available for early-career teachers.

Research Questions

Based on the stated purpose, this exploratory, descriptive study had a general research question: Which high-leverage practices have early-career special education teachers learned and used in their classrooms? Specifically:

RQ1: Do early-career teachers know the high-leverage teaching practices?

- 1a. Is there a difference between early-career teachers who are traditionally prepared and alternative route to licensure teachers' knowledge of high-leverage practices?
- 1b. Is there a difference between elementary and secondary early-career special education teachers' knowledge of the high-leverage practices?

RQ2: In instances where teachers demonstrate knowledge of high-leverage practices, where did they learn these strategies?

- 2a. Is there a difference between where traditionally prepared and alternative route to licensure early-career special education teachers learn the high-leverage practices?
- 2b. Is there a difference between where elementary and secondary early-career special education teachers learn the high-leverage practices?

RQ3: How often do early-career special education teachers report using high-leverage practices in their classrooms?

RQ4: What do early-career special education teachers report knowing about high-leverage practices? Which high-leverage practices do early-career special education teachers use in their classrooms and why?

Summary

Improving student outcomes requires improving teacher effectiveness. To be effective, early-career special education teachers need to be able to reach students with complex learning and behavioral needs. Being an early-career teacher comes with many challenges, which could cause them to focus more on their own survival than on students' learning outcomes. Researchers have found ways to improve student learning by using EBPs; however, these practices are often not easily implemented in school and classroom environments, leaving a research-to-practice gap as students with disabilities continue to struggle.

HLPs are a means to close this research-to-practice gap. HLPs are integral and active practices that support student learning across grade levels, subjects, and ability levels. Implementing HLPs in schools is a way to improve teacher efficacy, efficiency, and satisfaction and student achievement.

Teaching in the first years of service can feel overwhelming. Ensuring that teachers learn and practice the skills and techniques needed to be effective educators could be the preparation they need to enter classrooms confidently and effectively. Teachers can use HLPs across grade levels, content areas, and student ability levels to positively influence student learning. HLPs must be a part of all teacher preparation programs.

Key Terms and Definitions

This section includes the study's key terms and definitions.

Alternative Route to Licensure: A program for earning a bachelor's degree in an area other than education and entering the classroom with a provisional license while completing the required coursework for full licensure.

Early-career teacher: A teacher in the first 3 years in a classroom.

Evidence-based practices: Practices high-quality research has found effective for meaningfully improving student outcomes. Strong, high-quality evidence has shown that EBPs positively impact students (Cook et al., 2012).

High-leverage practices: Instructional approaches that educators can use to teach different types of content and learners. Educators often use HLPs to help students learn important content across subject areas, grades, and contexts. HLPs also support students' social and emotional development. HLPs are high-leverage because they affect student learning and contribute to advancing teaching skills (Brownell et al., 2021).

Preservice teacher preparation program: The education and training provided to preservice teachers before they have their own classroom.

Preservice teacher: A college student enrolled in a teacher education program receiving training at a higher education institution to become a professional teacher.

Traditional route to licensure: Attendance at a 4-year accredited college or university and a bachelor's degree in education.

Chapter 2: Literature Review

This review of the literature will provide an overview of the research conducted to improve student outcomes by improving educators' effectiveness. There is significant pressure within the field of education to standardize teaching practices and increase the academic performance and outcomes of all students (Cook & Cothren Cook, 2011). Typically, research- or evidence-based practices provide a framework for curriculum standardization. Chapter 2 presents the origins of EBPs and their role in education, especially in special education. There will be a discussion of why EBPs are insufficient to bring meaningful change to education, particularly for students with disabilities. The literature shows the importance of preparing early-career special education teachers to tackle the challenges of effectively educating students, specifically students with disabilities, even in their first year. Also explored will be how universities can best prepare preservice teachers to be effective educators and the impact on the field of education and the academic performance and outcomes of all students, particularly students with disabilities.

The Origin of Evidence-Based Practices

EBPs originated in the medical field in the 1990s (Odom et al., 2005). In medicine, determining an EBP requires evaluating the best available research, clinical expertise, and person-centered values to create proven practices (Kozleski, 2017). Doctors recognized a pattern of variable and ineffective medical practices misaligned with current research, so medical researchers began to collect and synthesize findings across high-quality studies. Clinical experts then used the results of these studies to identify the most effective practices for patients (Cook et al., 2013; Odom et al., 2005;

Russo-Campisi, 2017). EBPs were a model presented for practitioners to follow in choosing, appraising, implementing, and analyzing treatments (Torres et al., 2012). The idea of having effective practices supported by a trustworthy body of research and adherence to specific standards of rigor quickly spread to other fields, including agriculture, nursing, psychology, and education (Cook & Cothren Cook, 2011; Slavin, 2002).

Evidence-Based Practices in Education

EBPs are specific instructional techniques backed by meaningful, high-quality research supporting the efficacy of the intervention (Boardman et al., 2005; Cook & Cothren Cook, 2011; Cook et al., 2013; Horner et al., 2005). EBPs are strategies proven effective in multiple, evidence-based studies within different research designs inferring causality, not just correlation. The use of these practices should show meaningful effects on student outcomes (Cook & Cothren Cook, 2011; Cook et al., 2013).

EBP indicates imperative decision-making within practice based on the available scientific evidence (Kozleski, 2017). To be considered an EBP, an educational practice must meet several prescribed criteria related to the research design, quality, quantity, and effect size of the supporting research (Cook & Cothren Cook, 2011; Horner et al., 2005; Odom et al., 2005; Russo-Campisi, 2017). In education, EBPs are instructional approaches proven effective through rigorous criteria; scientific evidence is the basis for selecting the identified teaching practices and interventions as EBPs (Odom et al., 2005). Examples of evidence-based teaching practices include direct instruction, advanced organizers, mnemonic devices, visual displays, concept diagrams, study guides, peer-mediated learning, technology integration, self-management strategies, and effective

teaching behaviors (Jones, 2009). The specifications of determining an EBP receive discussion in a later section.

When implemented with fidelity, EBPs can meaningfully improve student performance (Torres et al., 2012). Fidelity of implementation is the implementation of an EBP as intended by the researchers (IRIS Center, 2022). Research shows that programs implemented with fidelity are two to three times more effective than the same program not implemented with fidelity (Durlak & DuPre, 2008). EBP implementation in the classroom is not only academically effective but carries the potential to create a more positive classroom environment. Demonstrating EBPs to be effective by reliable research creates an opportunity to affect meaningful positive change in education, especially for students at risk of failure and students identified with learning differences and disabilities (Cook & Cothren Cook, 2011; Torres et al., 2012).

Influence and Identification of Evidence-Based Practices in Education

The most direct approach to improving outcomes for low-achieving students is improving the effectiveness of their teachers. According to McLeskey and Brownell (2015), teachers' impact on student achievement is greater than that of other school influences, signifying a need for influential and successful educators. By identifying and implementing EBPs, researchers and educators ensure that students are receiving instruction and interventions shown to be effective, resulting in improved student outcomes (Russo-Campisi, 2017). To improve the quality and effectiveness of instruction, the U.S. government and the teaching profession have worked to systematize teaching (Cook et al., 2008; Kozleski, 2017). The goal is to ensure that teachers use interventions based on research rather than arbitrary selection (Odom et al., 2005; Russo-

Campisi, 2017). One of the best ways to ensure student success is to improve teacher effectiveness by implementing EBPs in schools.

The most significant push for schools to engage in EBPs has been through legislation. One of the four pillars of the No Child Left Behind Act of 2001 (NCLB) required schools to utilize proven educational methods (Odom et al., 2005). NCLB has mandates for using educational programs and practices in general and special education classrooms that have proven effective through rigorous scientific research. Cook et al. (2008) noted NCLB legislation incorporated the term *scientifically based research* more than 100 times. This push continued in 2002 when the Education Sciences Reform Act indicated the need for programs and practices proven to be effective at educating all students (Kozleski, 2017).

The focus on high-quality research and EBPs continued with the establishment of the IES and the development of the What Works Clearinghouse (WWC). The intent of the WWC was to provide educators, researchers, policymakers, and the public with a reliable source of evidence about effective educational practices. A greater focus on high-quality research and EBPs emerged in 2004 with the Individuals with Disabilities Education Act. The act specifies the ongoing need for teachers trained in scientifically based (evidence-based) instructional practices to improve the academic and functional performance of students with disabilities (Cook et al., 2008).

Before the push toward EBPs, teaching practices were more likely based on teacher experience or preference than empirical evidence (Vaughn & Dammann, 2001). Teachers used the strategies they felt worked for their students; however, to ensure positive learning outcomes for all students, it is essential to move from individual

educators' expertise to a practice-centered approach (Fixsen et al., 2013). With a shift toward EBPs, administrators and educators can rely on EBP classroom interventions and techniques proven effective in increasing student knowledge and capabilities, resulting in increased student academic success. The EBP approach also allows schools and teachers to present student academic success to policymakers and the general public via data-based decision-making and effective instructional methods (Odom et al., 2005). These data help educators and policymakers make educational procedures, legislation, and funding decisions. Standardized procedures are also more open to public inspection and legal review (Carnine, 2000). However, standardization procedures and homogenized instructional strategies lack consideration of the individual needs of students with disabilities.

Determining Practice Is Evidence-Based

In 2005, the CEC published a special issue of the journal *Exceptional Children* focused on identifying quality indicators to evaluate research studies using different research methodologies (Odom et al., 2005; Russo-Campisi, 2017). The issue contained two articles that have been foundational in determining EBPs' identification in special education (Russo-Campisi, 2017). Horner et al. (2005) articulated the quality indicators for single-subject design research, and Gersten et al. (2005) delineated the quality indicators for group and quasi-group experimental design. In 2014, CEC published *Standards for Evidence-Based Practices in Special Education*, further delineating the quality indicators for determining EBPs. The following criteria have been foundational in evaluating research studies of interventions for students with disabilities.

Quality Indicators

Description of Participants and Setting. Quality indicators necessitate effective descriptions of the participants. The descriptions require details such as participant demographics, the method for determining disability status, diagnosis, the research setting, and how participant selection occurred (Cook et al., 2014; Russo-Campisi, 2017).

Intervention Agent. Quality indicators require a description of the researcher performing the intervention. The description must include the intervention agent's training and necessary qualifications, as well as their role and background. If the intervention agent is someone other than the researcher writing the paper, it should be made clear to the reader (Cook et al., 2014; Russo-Campisi, 2017).

Description of the Practice. Quality indicators show that the researcher provided a detailed description of the procedures and materials used in the intervention. The description of the practice or intervention must be detailed enough for replication by future researchers or in an intervention setting (Cook et al., 2014; Gersten et al., 2005; Russo-Campisi, 2017).

Implementation Fidelity. Quality indicators necessitate adherence to the conditions and quantity of the interventions examined, which a researcher must report. Any observation checklists or other elements critical to the practice must be included. Also required is a description of the means of measuring conditions and dosages across settings within the research study (Cook et al., 2014; Gersten et al., 2005; Russo-Campisi, 2017).

Internal Validity. Quality indicators require that the independent variable is under the researcher's control. The researcher must describe the service provided in the

control and intervention groups. Researchers should demonstrate experimental control and describe the intervention conditions in great detail, which they can do in two ways. First, the researcher can systematically compare the outcomes of a group that receives the intervention versus a control group that does not. Alternately, the researcher can systematically compare individuals' performance with and without the practice in place. Examples of research designs showing experimental control are group experiments, quasi-experiments, and single-subject research (Cook et al., 2008). Horner et al. (2005) suggested achieving experimental control through the researcher's ability to introduce and then withdraw the variable or stagger the introduction of the independent variable to demonstrate the impact of that variable. Design controls must be in place to account for threats to internal validity. It is also best if the participants stay in the study so that attrition is not a threat to internal validity (Cook et al., 2014; Gersten et al., 2005; Russo-Campisi, 2017). Experimental control is necessary for researchers to conclude that educational EBP causes changes in student outcomes. Researchers look for causality, not just correlation, in their research findings (Cook et al., 2013; Horner et al., 2005).

Outcome Measures or Dependent Measures. Quality indicators mean that outcome measures are applied appropriately to gauge the effect of the intervention on study outcomes. The study must clearly define and describe the dependent variable and report all of the intervention's effects, not just those with a positive effect size. Additionally, EBP researchers must demonstrate experimental control, showing they have accounted for and ruled out alternative explanations for the changed student outcomes (Cook & Cothren Cook, 2011). The research conducted should be socially valid in quality research. Reporting the data requires describing the measures fully and

discussing their reliability. The researcher must present a compelling case for the importance of the research (Cook et al., 2014; Gersten et al., 2005; Russo-Campisi, 2017).

Data Analysis. For research to be considered high quality, the techniques used to measure the outcomes must be appropriate for the research design. The effects must be demonstrated statistically or visually for a reader to understand (Cook et al., 2014; Russo-Campisi, 2017).

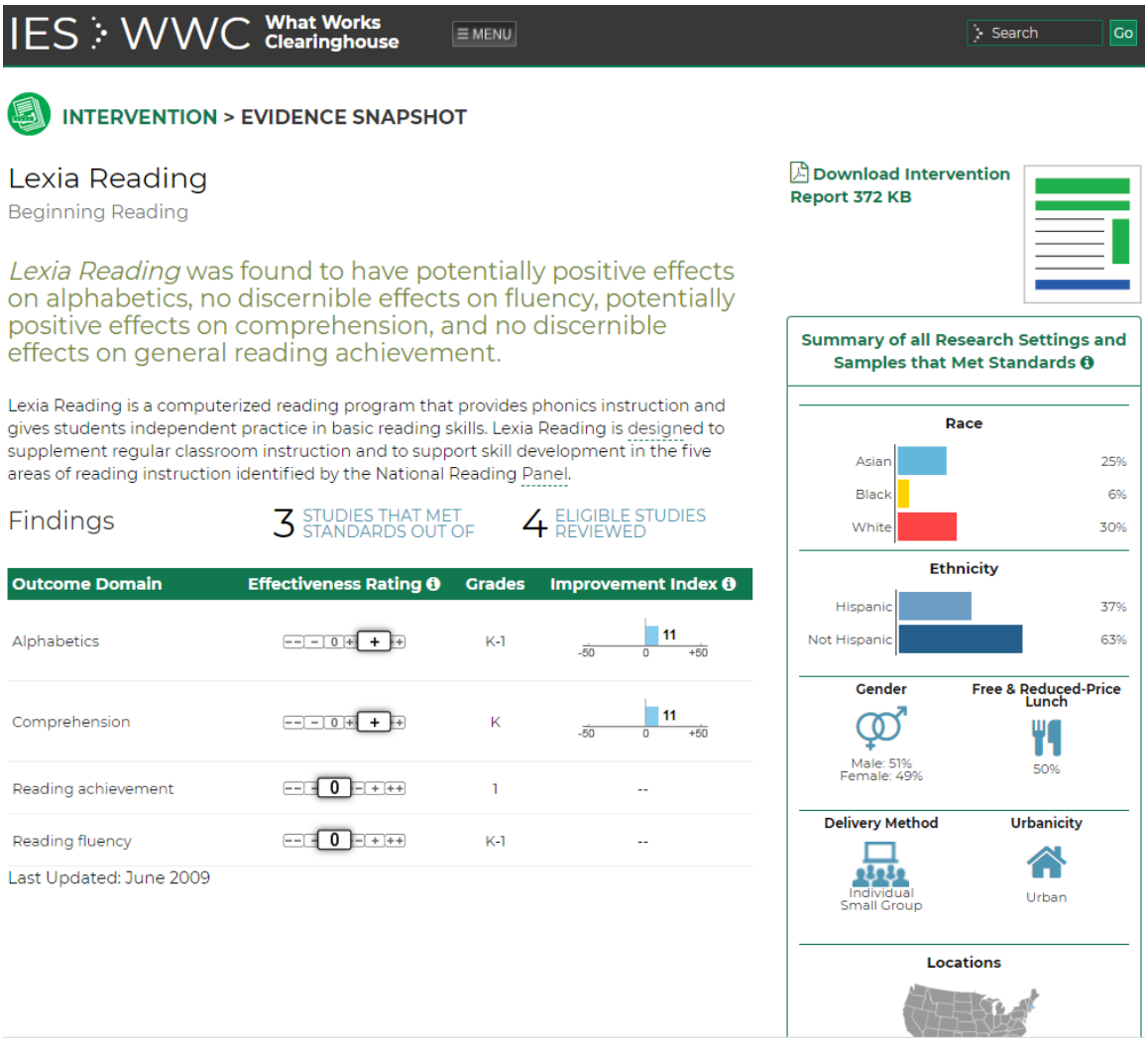
Effect Size and the What Works Clearinghouse

Effect sizes are measures of the differences in means between two groups—for example, the control group and the group receiving the intervention (Kraft, 2020). The WWC was an initiative to review and summarize evidence on educational programs and interventions. The goal of the WWC is to evaluate causal research designs and create evidence summaries for education interventions. The summaries created contain a six-category effectiveness rating based on the quality of the research design, the magnitude of the findings, the precise means of presenting the findings, and the consistency of the results (Kraft, 2020). In 2020, the WWC released a new procedures handbook (Version 4.1) with new effect size and standard error formulas. The WWC adopted a fixed-effects meta-analytic framework, which involves weighting studies, with studies with greater sample sizes getting proportionally more weight (Williams et al., 2020). Demonstrating EBP is based on high-quality experimental research with converging findings from multiple high-quality experimental studies with a delineated research design and demonstration of experimental control. The WWC categorized these practices as having positive, potentially positive, potentially negative, or negative effects (Cook et al., 2013;

WWC, 2020). The determination of the research becoming an EBP with classroom implementation depends on meeting the criteria.

Figure 1

Example of Effects Shared on What Works Clearinghouse



Note. This figure is an example of the effects shared on What Works Clearinghouse. The intervention shown is the Lexia Reading Intervention program. Retrieved September 5, 2021, from https://ies.ed.gov/ncee/wwc/InterventionReport/274.

Practice Efficacy

It is important to note that considering a practice to be evidence-based does not guarantee success for every student in every situation; however, when used strategically with the right students at the right time, EBPs provide a higher likelihood of student learning and success. When teachers apply EBPs as designed with fidelity, educators can be confident of the greatest likelihood of improving student outcomes (Cook et al., 2008; Russo-Campisi, 2017). Educators should be prepared to expect variations in student success, even with appropriately applied EBPs.

Practice Fidelity

Effective teaching involves more than just choosing the best EBP. Even the most effective interventions, practices, or teaching techniques can have little impact on student outcomes if implemented through ineffective teaching (Odom et al., 2005; Torres et al., 2012). Effective instructional techniques provide a foundation for successfully implementing any EBP. Some effective teaching techniques include maximizing academic engagement, using appropriate pacing, preteaching key vocabulary, previewing instruction, monitoring student performance, circulating and scanning the instructional environment, recognizing appropriate behavior, exhibiting enthusiasm, displaying awareness of what is happening in the classroom, and using wait time (Torres et al., 2012). Pairing effective teaching techniques with EBPs provides the best opportunity to maximize student outcomes. An evidence-based educational practice leads to a change in student outcomes.

Evidence-Based Practices and Special Education

The CEC, the largest professional organization dedicated to educating children with disabilities, sets standards for identifying EBPs in special education (Cook et al., 2014). Historically the EBPs implemented in special education have focused on interventions, providing special education teachers with more flexibility in adapting the interventions to meet their students' needs (Cook et al., 2009); however, the WWC has not presented EBPs for students with disabilities. For example, the WWC has historically lacked consideration of evidence from single-subject research, which is the design of many studies for students with disabilities (Cook et al., 2014). One feature of special education research that makes it more complex is the variability of the participants (Odom et al., 2005). There are 12 identified disability categories and variations in needs and abilities within these 12 categories.

Gersten et al. (2005) and Horner et al. (2005) established research practices applied to many areas of special education research through group experimentation and single-subject designs. As researchers continue to identify EBPs effective for educating students with disabilities, they need to focus on whether programs are effective and remain so when applied to whole classrooms of students, small groups, and individual learners. Researchers must identify for whom each practice serves. For example, a practice proven effective for students with an autism spectrum disorder might not have the same impact on students with emotional disturbances (Guralnick, 1999). More research is needed.

EBPs in special education can meaningfully improve the quality of special education services and the outcomes of learners with disabilities. When students do not

respond to in-class instruction and do not reach curricular goals, teachers should ask themselves if they have tried the most effective interventions and teaching practices (Torres et al., 2012). Identifying and effectively using EBPs is especially important for teachers of students with disabilities (Kretlow & Blatz, 2011). It is essential to educate all students using the most effective practices, methods, and materials; students identified with a disability can least afford exposure to practices, teachers, and schools that ignore research (Jones, 2009). Multiple studies have documented the negative results of ineffective instruction for students with disabilities, including school failure, increased dropout rate, and futures with decreased levels of productivity and independence (Jones, 2009). Because of the importance of effective instruction, the NCLB (2001), then the ESEA, required accountability from schools failing to use these EBPs and not showing increased student achievement.

Vaughn and Dammann (2001) expressed the need for students qualifying for special education services to have well-trained and prepared teachers. Typically achieving students can make up for lost time by learning independently and compensating for educators' missteps; however, students qualifying for special education services have more significant barriers. The influence of research and evidence on decision-making has even greater value for those students with disabilities who require more precision in instructional and behavioral plans. Meta-analyses show that participating in special education programs does not necessarily create a positive effect on students' learning; sometimes, there are even negative effects associated with the learning outcomes of students participating in special education services (Burns & Ysseldyke, 2009). About two thirds of all students with disabilities graduate from high

school (Kozleski, 2017). Burns and Ysseldyke (2009) suggest that ongoing poor outcomes are due to special educators' use of instructional practices that are not research-based.

Because of the importance of EBPs for students with disabilities and the lack of identified EBPs targeted explicitly for this population, the CEC identified EBPs for students with disabilities. Cook et al. (2015) systematically vetted these practices in a Delphi study with a panel of experts. All the identified practices demonstrated interrater reliability, allowing flexibility in some areas while providing specific standards in others. In identifying these EBPs, the researchers consider group and single-subject studies. Cook et al. also considered whether the practices were applicable across a range of populations, disability categories, environments, and outcomes in special education. The researcher constructed a dependable toolbox of EBPs for administrators and teachers to reference student-specific effective practices. This EBP toolbox is a positive step to ensure that students identified with a learning challenge or disabilities receive access to the best teaching and learning methodologies.

The Research-to-Practice Gap

When it comes to classroom practice, there continues to be extensive use of individuals' subjective judgments based on trial and error instead of research-based instruction and interventions (Brock et al., 2020). Numerous researchers have posited theories on the research-to-practice gap. The research-to-practice gap occurs when new ideas and practices are discovered and proven effective and when those discoveries become a routine part of practice (Brock et al., 2020; Greenwood & Abbott, 2001). The reasons for the research-to-practice gap can be complicated and textured, depending on

many factors. This confusion is a particular problem in education, possibly because there is a separation between the research community and the teachers implementing the practices in the classroom. The longstanding gap between research and practice in education has grown increasingly apparent. There are many effective teaching practices identified to address the academic and behavioral needs of students who struggle in school; however, extensive classroom implementation is not standard. Bridging the research-to-practice gap for all students is essential, especially for those identified with disabilities (Brock et al., 2020). Learners with disabilities require effective instruction to reach their potential, making implementing EBPs in special education even more critical.

This research-to-practice gap has received extensive study and discussion, albeit with little attention paid to teachers learning to use the practices during initial teacher preparation (McLeskey et al., 2019). This gap between research and practice in special education places severe limitations on the achievement of students with learning and behavioral disabilities (Cook et al., 2013, Farley, 2020). Addressing the gap between research and practice is crucial because research should be the driving force in educational practice (Burns & Ysseldyke, 2009). When EBPs remain idealized practices from highly controlled experimental research, it can be difficult to move them into the complex world of classroom instruction (Kozleski, 2017). Teachers must be involved in discussions about the research-to-practice gap and implementing EBPs because successful reform requires addressing the attitudes, beliefs, and behaviors of those who implement the change. Teachers implementing new EBPs, methods, or interventions must incorporate new techniques into their skills repertoire (Burns & Ysseldyke, 2009). Teachers ultimately determine what instruction students will receive. University

professors, administrators, in-service providers, textbooks, and research articles recommending EBPs will not impact student outcomes unless teachers believe the practices work and are worth the time and effort to implement. Most people (including teachers) are more receptive to innovations when they understand their rationale and intended impact (Burns & Ysseldyke, 2009; Cook et al., 2008). Despite growing acknowledgment within the research community that implementing research into practice is a complex and messy task, conceptual models describing the process remain one-dimensional. A strong EBP is valuable, but helping teachers to implement those practices is another task altogether (Fixsen et al., 2013).

Barriers for Teachers

Researchers have posed several theories about the barriers to closing the research-to-practice gap and helping increase the number of teachers effectively implementing EBPs. One of the barriers to implementing these powerful practices is that teachers prefer to rely more on personal sources and experience than research when determining what and how to teach (Cook & Cothren Cook, 2011). To get EBPs into U.S. classrooms, educators must feel convinced that the EBP label is a reliable indicator of what will help them move their students forward (Cook & Cothren Cook, 2011; Russo-Campisi, 2017). Because of this resistance, Carnine (2000) criticized education as an immature profession, suggesting that it lacks a solid scientific base for its practices and has less respect for evidence than opinion and ideology. Professionals in immature professions (teachers, in the scholar's opinion) do not employ standardized procedures based on research findings using control groups. In contrast, a mature profession shows a shift from individual experts' judgments to judgments constrained by quantified data available

to a broad audience. Mature professions put less emphasis on personal trust and more on objectivity and a greater role for standardized measures and procedures informed by scientific investigation using control groups. Supporting this thinking, Fixsen et al. (2013) asserted that facilitating EBP implementation requires educators to shift from the expertise of individual practitioners to an institutionally mandated practice-centered approach. Quantified data are better accepted because the procedures for achieving numerical data reduce subjective decision-making. Standardized procedures are also more open to public inspection and legal review (Carnine, 2000).

Another barrier to EBP implementation is that teachers are in the business of educating people. In 1972, Zahorik and Brubaker stated that teachers are not machines that can use with flawless precision whatever technique research has certified. Variability in educational delivery poses a significant challenge in the area of special education. The concept and design of special education complicate the generalizability of research and the implementation of practices identified as evidence-based (Kozleski, 2017; Odom et al., 2005). In special education, the instruction must be individualized based on the student's needs. Many EBPs used across different settings and subjects have shown to be effective only for students with high-incidence disabilities. These teaching practices include direct instruction, advanced organizers, mnemonic devices, visual displays, concept diagrams, study guides, peer-mediated learning, technology integration, self-management strategies, and effective instructional behaviors (Jones, 2009). An important consideration is that using an EBP does not lessen the critical role of an effective teacher (Torres et al., 2012). An EBP can be an approach to professional decision-making instead

of an action, causing continued confusion and misunderstanding about practices (Cook & Cothren Cook, 2011).

The differences in opinion about what defines an EBP could be the most significant barrier. Stakeholders do not agree on how much and what type of research is necessary to consider a practice evidence-based. This lack of agreement creates confusion and frustration among educators who cannot understand how one organization deems a practice evidence-based, and another does not. An example is direct instruction, which the *Best Evidence Encyclopedia* identified as a practice with strong evidence of effectiveness (the highest category) for struggling readers. Although considered promising, direct instruction is a practice listed by the Proven Practices Network and the WWC reports, which indicate that direct instruction has no discernable effects on teaching struggling readers (Cook & Cothren Cook, 2011). Teachers must quickly determine if an available tool will impact student outcomes (Kretlow & Blatz, 2011). These barriers will continue to prevent the full utilization of EBPs in classrooms unless all stakeholders collaborate to reduce them.

Preparing Effective Teachers

Additional barriers to classroom implementation of EBPs are the traditional ways of educating preservice teachers. Teachers in their first 3 years in the classroom operate in a survival and exploration mode (Jones, 2009). Accordingly, new teachers are less likely to adopt EBPs that have not been explicitly taught and practiced in their preservice education programs (Jones, 2009). Teacher preparation overwhelmingly occurs in settings removed from the practice of teaching; in addition, most coursework emphasizes reflection, investigation, and knowing about practices rather than how to use them in

classrooms. Most teacher education programs have minimal connections between coursework and field experience. There is insufficient concrete practice time for preservice teachers to learn how to enact quality practice when they begin teaching, with specific approaches left to chance (Brownell et al., 2019).

Teacher educators expect their students to learn EBPs during field experiences, which is the component of the program over which the educators often have the least control (McLeskey et al., 2019). Preservice teachers then learn practices they encounter in field settings, such as during their practicum or student teaching. The practices they observe their lead teacher implementing might or might not be effective. Effective instructional practices are seldom systematically taught during teacher preparation through closely aligned coursework and field experiences. Even when teaching EBPs to preservice teachers, teacher educators often fail to connect research and practice so that preservice teachers are comfortable and confident using these strategies in their first years in the classroom (Brownell et al., 2019). By changing the instruction at the university level, teacher educators can have a greater impact as preservice teachers become first-year teachers with their classrooms and students (McLeskey et al., 2019)

Most teacher education preparation programs are not structured to systematically support preservice teachers learning and implementing effective classroom practices (Brownell et al.., 2019). In the preservice college years, most instructional time and effort entail discussing teaching and effective practices rather than preparing preservice teachers to use and implement effective practices in the classroom (McLeskey et al., 2019). At times, there is a disconnect between what preservice teachers learn in their methods classes and practice in their clinical experiences. A compounding issue is that

connections between methods classes and clinical experiences have remained limited or nonexistent in many teacher preparation programs. To improve how teachers educate students, particularly in the impressionable first years of their careers, universities should base teacher training on EBPs rather than providing mixed messages about best practices (Cook et al., 2008). Most teacher education occurs in college coursework and not in authentic K–12 classroom settings where preservice teachers can practice what they have learned and have opportunities to acquire situational knowledge (Brownell et al., 2019).

Because of this disconnect, teacher educators leave the development and practice of pedagogical skills in the interactive aspects of teaching to field experiences over which they have minimal control. Preservice teachers with exceptionally skilled supervising instructors might learn to implement effective practices; however, this is not a guaranteed or systematic way to teach such vital practices (McLeskey et al., 2019). Under the traditional way of educating teachers with methods courses followed (perhaps semesters later) by clinical time in the classroom, there are limited opportunities to apply and practice the strategies taught in the methods courses. One solution was to move to a specific list of EBPs to teach to preservice teachers. This focused set of EBPs has influenced the field of education into HLPs.

The Origins of High-Leverage Practices

Several educational disciplines have adopted HLPs to improve teacher practice and student outcomes, including elementary education, mathematics, science, foreign language, and special education. Each discipline requires identifying highly focused teaching practices with the most significant capacity for improving student outcomes in specific curricula (McLeskey et al., 2019; Windschitl et al., 2012). The University of

Michigan was one of the first institutions to develop a concise list of HLPs for its preservice general education students (McLeskey et al., 2019).

Developing HLP practices for special education teachers has been a collaborative process. In 2014, the CEC collaborated with the Teacher Education Division of CEC and the CEEDAR Center at the University of Florida, appointing an HLP writing team (McLeskey et al., 2019). The committee began by looking through the HLPs previously developed in other disciplines, including elementary education, followed by exploring good core practices for all teachers. After reviewing the data, the committee determined that the listed HLPs did not address all of the elements effective special education teachers need to know and do to deliver intensive, specialized instruction and behavioral support. The committee identified a need to develop a set of HLPs that specifically addressed the practices of effective special education teachers (McLeskey et al., 2019).

Over the next year, the HLP writing team sought feedback on its draft lists of HLPs (McLeskey et al., 2019). They asked focus groups, presented at conferences, disseminated surveys, and held meetings with stakeholders, including special education teachers, administrators, and teacher educators. The team made sure to include professionals having experience and expertise with a wide range of students with varying disabilities to ensure the final list of 22 practices was applicable to all K–12 special education teachers.

The current list of HLPs is a sound starting point to provide preservice teachers with a strong foundation of effective practices. Using HLPs consistently can improve student outcomes and build teachers' confidence as they develop into seasoned professionals. HLPs will likely change and develop over time as researchers find new

ways to increase student learning and improve behavioral outcomes. The goal is to continue to have a specific list of HLPs effective as a core curriculum for teacher preparation (McLeskey et al., 2019).

High-Leverage Practices in Special Education

McLeskey et al. (2019) identified HLPs as a specific set of practices integral to the support of student learning. These practices are systematically taught, learned, and implemented by preservice teachers entering the profession. HLPs are teaching practices identified as fundamental to supporting student learning. These practices are research-supported for fostering student learning and behavior and are broadly applicable across content and disability areas, with frequent use by teachers in the classroom. Also referred to as the beginner's repertoire, HLPs are a specific set of practices supporting student learning taught, learned, and implemented by new teachers (Windschitl et al., 2012).

There are 22 HLPs for special education teachers focused on four areas of practice: collaboration, assessment, social-emotional behavior, and instruction. The choice of HLPs depends upon research showing they have significant potential for improving academic or behavioral outcomes for students with disabilities (McLeskey et al., 2018). These teaching structures should be present across the majority of instruction, especially for students identified with a disability (Riccomini et al., 2017). The 22 HLPs represent instructional practices constituting a common core of fundamental knowledge and skill to teach aspiring teachers as a part of preservice teacher education programs.

There are many EBPs, with more added as research progresses. To effectively teach research-based practices to preservice teachers, researchers created a list of these impactful practices (McLeskey et al., 2019). Identifying the 22 practices included the

following guidelines: the practices needed to focus directly on instructional practices, occur often in practice, be research-based, foster student engagement and learning, and apply broadly across content areas. Their skillful execution is fundamental to effective teaching (CEC, 2016; CEEDAR, 2021). The 22 HLPs for special education fall into four categories.

Collaboration

1. Collaborate with professionals to increase student success.
2. Organize and facilitate effective meetings with professionals and families.
3. Collaborate with families to support student learning and secure needed services.

Assessment

4. Use multiple sources of information to develop a comprehensive understanding of a student's strengths and needs.
5. Interpret and communicate assessment information with stakeholders to collaboratively design and implement educational programs.
6. Use student assessment data, analyze instruction practices, and make necessary adjustments that improve student outcomes.

Social-Emotional/Behavioral

7. Establish a consistent, organized, and respectful learning environment.
8. Provide positive and constructive feedback to guide students' learning and behaviors.
9. Teach social behaviors.

10. Conduct functional behavioral assessments to develop individual student behavior support plans.

Instruction

11. Identify and prioritize long- and short-term learning goals.
12. Systematically design instruction toward a specific learning goal.
13. Adapt curriculum tasks and materials for specific learning goals.
14. Teach cognitive and metacognitive strategies to support learning and independence.
15. Provide scaffolded support.
16. Use explicit instruction.
17. Use flexible grouping.
18. Use strategies to promote active student engagement.
19. Use assistive and instructional technologies.
20. Provide intensive instruction.
21. Teach students to maintain and generalize new learning across time and settings.
22. Provide positive and constructive feedback to guide students' learning and behavior.

Transition From Evidence-Based Practices to High-Leverage Practices

Researchers agree that the most impactful way to impact classroom practice is by teacher educators and researchers changing what and how preservice teachers learn at the university level (Brownell et al., 2019; Jones, 2009; McLeskey et al., 2019). The conversation moved from EBPs to HLPs, allowing teachers to enter their first year of

teaching with powerful and specific strategies in their toolbelt. As a result, new teachers will be more confident and competent, and their students will benefit from teachers' use of HLPs in the classroom (McLeskey et al., 2019). Teachers are the determinates of the material and delivery of education to students. Despite efforts to help educators better understand EBPs, there remains a gap between the practices shown as most effective and the material delivered in classrooms (Kozleski, 2017). School administrators continue to create professional development to reduce the knowing–doing gap for current teachers; however, impacting the knowledge and practices of preservice teachers could produce better results. Teachers must translate content knowledge for students using effective pedagogical practices while remaining responsive to students' learning and social-emotional needs, an approach that might not be innate (Jones, 2009). These learning strategies provide a strong knowledge base for teachers and make it possible for early-career teachers to implement HLPs flexibly across the curriculum and different learning environments as opposed to a rigid EBP. Preservice teachers in preparation programs are not experts; they are novices addressing the complex process of refining and adjusting their pedagogical approaches to adjust for their students' learning, which can be highly challenging (Brownell et al., 2019). Novices traditionally implement rules and strategies they have learned and do not demonstrate the more flexible knowledge displayed by experts. Preservice teachers require effective extended practice to develop the necessary knowledge to respond flexibly to the learning and behavior challenges of students with disabilities (Brownell et al., 2019, Farley 2020).

Teacher educators' inability to explicitly link the importance of EBPs with dedicated practicum time for practice perpetuates the research-to-practice gap, causing

frustration for researchers, administrators, educators, and policymakers (Brownell et al., 2019). Perhaps most importantly, this oversight results in diminished student outcomes. Teacher educators can reduce the research-to-practice gap by ensuring preservice teachers know and can competently perform the most impactful strategies, creating positive and significant student learning outcomes (Jones, 2009; McLeskey et al., 2019). This significant change will help ensure that beginning teachers implement the best practices, resulting in more powerful classroom instruction. McLeskey and Brownell (2015) argued that teacher education programs should focus on teaching HLP to preservice teachers to cultivate educator readiness to improve outcomes for all students, including low-achieving learners in high-poverty schools. Daily teacher practices impact student learning the most (McLeskey et al., 2019). Therefore, preparation programs should prepare teachers for the actual work they will do in classrooms. Teacher educators can limit the knowing–doing gap by equipping preservice teachers with a solid repertoire of effective, research-based practices. Creating teachers with a rich understanding of EBPs will lead to positive and significant student learning outcomes (Jones, 2009).

How Do High-Leverage Practices Compare to Evidence-Based Practices?

When combined, EBPs and HLPs have the greatest potential for improving student outcomes (McCray et al., 2017). HLPs can provide a structure for supporting effective teaching practices at all levels of instruction and across all subject areas. EBPs can allow teachers to focus on specific student learning needs with targeted programs and strategies. For example, a teacher could implement flexible grouping in the classroom (an HLP) to provide specific reading instruction (an EBP) followed by choral reading (an EBP; McCray et al., 2017).

The research and information used to develop understanding and criteria for EBPs helped to inform the list of HLPs. To develop HLPs, developers looked to EBPs and found characteristics of effective teaching (McLeskey et al., 2019). Despite the intersectionality between EBPs and HLPs, the approaches have some notable differences. EBPs are specific interventions bound by the students and classrooms of their use (Brownell et al., 2019; Cook et al., 2013; McLeskey et al., 2019; Riccomini et al., 2017; Windschitl et al., 2012). In contrast, HLPs are not specific practices but features and characteristics of effective teaching generalizable across different content areas (Riccomini et al., 2017). HLPs serve as the foundational aspects of the delivery of effective instruction introduced, taught, and practiced before preservice teachers graduate and have their own classrooms. These practices serve as a beginner's repertoire, but they are not the end of the practices teachers will need in their careers.

How Are High-Leverage Practices Used to Educate New Teachers?

The current goal of teacher preparation programs is to take preservice teachers operating as novices with inert knowledge and having information about what to do but not necessarily understanding how to operationalize that knowledge in strategic ways into advanced beginners (Brownell et al., 2019). Historically, districts and universities speak about instruction in vague terms. HLPs provide precision and focus to teaching and teacher expectations (McCray et al., 2017). Novice teachers are generally rigid in their use of pedagogical practices. Alternately, advanced beginners start to apply their knowledge of rules and pedagogy more strategically based on opportunities to use their knowledge in practice and adapt it based on feedback, thus making them more responsive to student needs. Recognizing this issue, the National Council for Accreditation of

Teacher Standards (2010) issued a position statement to center teacher education in clinical practice. The recommendation was that teacher education be fully grounded in clinical practice and interwoven with academic, content, and professional courses (McLeskey & Brownell, 2015). Such an approach would provide more opportunities for candidates to connect what they learn to implementation challenges under skilled clinical educator mentorship. In 2013, the Council for the Accreditation of Educator Preparedness, the successor to the National Council for Accreditation of Teacher Standards, required teacher education programs to be grounded in clinical practice as a criterion for approval.

An effective preservice teacher program offers varied practice opportunities (Brownell et al., 2019; McLeskey et al., 2019), including (a) modeling to help learners recognize features of effective performance and know what they look like in action; (b) feedback, which allows learners to refine their practice to enable more effective performance; and (c) reflection, analyzing one's performance or the performance of peers and practicing teachers and their students. Through practice, candidates can recognize the aspects of their instruction needing improvement. Interweaving HLPs increases the cognitive demand candidates experience and improves their ability to implement the practices. Additional practice opportunities, such as duration, scaffolded practice, cohesive practice, and approximating authenticity, will help preservice teachers to implement HLPs more effectively and comprehensively as beginning educators (Brownell et al., 2019).

Conclusion

Improving student performance and outcomes is a primary goal of schools. Increasing student performance first requires increasing teacher effectiveness, particularly the effectiveness of new teachers. Teachers are the decision-makers for the content and means of instruction delivered to students. There are extreme demands on teachers, including new educators, to educate a diverse range of students to achieve a high level of performance. Teachers must focus on academic learning while responding to students' social-emotional and behavioral needs (McLeskey et al., 2019), which is particularly challenging for educators entering the field. By learning the 22 HLPs and practicing them through field experience, teachers can learn to rely on research to identify the most effective instructional methods to educate students.

Preservice teaching programs are shifting toward enabling preservice teachers to implement HLPs more strategically, benefitting the preservice teachers and their students. Teacher education programs are beginning to provide multiple opportunities for preservice teachers to practice HLPs in increasingly complex settings. These practice opportunities are focused and deliberate, with feedback for the preservice teachers to understand what effective use of HLPs looks and feels like

As a result of this shift, teachers are entering their first years of teaching more prepared to support and educate the students in their classrooms. Consistent use of HLPs will bridge the research-to-practice gap and increase the impact teachers can make, especially in their first years in the classroom. Teachers are also less likely to leave the field if they feel empowered to support and educate their students, resulting in better teachers and improved student outcomes.

Chapter 3: Method

According to Darling-Hammond (2009), teachers' experiences in preservice teacher preparation programs and the first 5 years of teaching are impactful. This exploratory, descriptive study was a means to examine early-career special education teachers' knowledge and use of HLPs. The focus of the study was on the HLPs participants learned in teacher preparation or professional development and the frequency of use in their classrooms. Finally, this study centered on how early-career special education teachers described their best teaching practices to determine if the practices were part of the four research-based core HLPs of collaboration, assessment, instruction, and social-emotional practices.

Participants

All participants worked in one large urban school district, as indicated by the selected Western U.S. District's Human Resources Department. The participants were early-career special education teachers in their first 5 years of teaching who were traditionally prepared for their role in the classroom or entered the field through an ARL program. Traditional preparation consists of receiving preservice preparation at a 4-year university program, often with a major in education. ARL teachers enter the classroom with college degrees but little to no teacher education or preparation, essentially learning to teach in the classroom. ARL early-career special education teachers might hold degrees in journalism, biology, sociology, or other fields, earning positions before completing their teacher preparation courses and learning to teach while leading a classroom. In this study, the early-career special education teachers had recently

transitioned from their teacher preparation, and the early-career ARL teachers were continuing their preparation while leading their classrooms.

Research Design and Method

Plano Clark and Badie (2010) state that research questions set boundaries to a research project, clarify its specific directions and keep a study from becoming too large" (277). Based on the research questions a multiple method approach was warranted rather than a mixed methods approach, as the research questions or boundaries for this study did not include a question where data are mixed. Therefore, this exploratory, descriptive study was conducted with a multiple methods approach using survey methods and focus groups. According to Johnson et al. (2007), "Multi methods research is when different approaches or methods are used in parallel or sequence but are not integrated until inferences are being made" (p 119).

The study included two groups of early-career teachers: those prepared in traditional teacher education programs and ARL-prepared educators. Teachers worked in both elementary and secondary school positions, thus creating four cells of participants for analysis. The dependent variables were teachers' reported knowledge of HLPs, where they learned HLPs, and the frequency of use. Designed and emailed to 348 early-career special education teachers in one Western state, the study's survey included 72 questions: four to collect demographic information and 68 focused on HLPs. The last question was an invitation to participate in a focus group to discuss daily teaching practices. Conducting the study with a multiple methods design, as described by Anguera et al (2018) created triangulation which helped to serve as a reliability check.

A survey was an appropriate instrument for this study because surveys are a systematic method for gathering information from a sample to construct quantitative descriptors of the large population's attributes (Wolf et al., 2016). Survey research is a quantitative approach that includes reporting measures for selected samples. The instrument is flexible and useful for studying various research questions. Researchers use surveys to gather facts and experiences from numerous respondents. Aware of the need to minimize total survey error (reliability) and achieve a valid survey product, the researcher developed the survey based on Alexander's (Alexander & Dawson, 2019) instrument.

As a follow-up to the survey, participants were asked if they wanted to volunteer for a focus group conversation. The purpose of the follow-up focus group was to allow volunteer participants to share their effective teaching practices. Focus groups are a robust way to collect data because of their explicit use of group interaction to produce data (Greenspan et al., 2021). The focus groups occurred via Zoom, and the researcher ensured all participants could access and feel comfortable using the necessary technology. An online focus group enabled early-career educators from the large urban school district to participate and share their experiences. An essential part of the focus groups was sharing and comparing (Morgan & Hoffman, 2018) similarities and differences in the participants' experiences for valuable emerging data points.

This study's purpose was to examine early-career special education teachers' experiences with HLPs, specifically the HLPs they know and use. The study also focused on which HLPs the participants learned in teacher preparation or professional development and which they use in their daily work. Finally, there was a follow-up focus

group to learn how the participants described their best teaching practices to determine if they were part of the four core HLPs.

Instrumentation

This study included two instruments, the HLP Survey (see Appendix A) and the HLP focus group guiding questions (see Figure 4).

High-Leverage Practices Survey

A survey is a systematic method of gathering information from a sample of entities to construct quantitative descriptors of the attributes of the larger population of which the entities are members (Joyce et al., 2022; Wolf et al., 2016). The HLP survey was based on a classroom observation instrument developed by Alexander (Alexander & Dawson, 2019), with the addition of four demographic questions. See Figure 2 for a list of the demographic questions.

Figure 2

Demographic Questions Asked in Survey

1. What grade do you teach? ○ K–5 ○ 6–12
2. What was your preparation for becoming a teacher? ○ Alternate Route to Licensure (ARL) ○ Traditionally prepared (4-year college or university resulting in teacher licensure)
3. How many years have you been a classroom teacher? ○ This is my first year ○ 2–3 ○ More than 3 years
4. What best describes your teacher position? ○ Resource – generalist ○ Strategies – Working with students with Autism ○ CLS – Working with students on life skills ◉ EBD – Working with students with behavioral challenges

SurveyMonkey was the platform used for survey delivery. Although SurveyMonkey indicated an estimated completion time of 15 minutes, the actual time was 6 to 12 minutes. Participants did not need to provide their names and contact information, meaning the survey responses remained anonymous for those who declined to participate in the focus group. The respondents willing to take part in the focus groups entered their names and contact information. The researcher removed the participants' names and used pseudonyms in the discussion of the findings. The completed surveys remained on a password-secured website.

The survey had 73 questions organized around the four HLP categories as worded in Alexander's (Alexander & Dawson, 2019) observation instrument based on the CEEDAR standards, with no additions or text revisions. Maintaining Alexander's structure, text, and formatting created inherent validity in the instrument. All survey questions had a repeating and identical response frame for each HLP. Each section presented an HLP, and the participants indicated if they knew the practice was an HLP (yes/no). Next, the teachers reported where they learned the HLP: teacher preparation, professional development, mentorship, or have not yet learned. The last question was, "How often do you use this practice?" The choices were at least once a day, at least once a week, at least once a month, at least once a quarter, at least once a semester, at least once a year, and never.

The first HLP category is Collaboration (Alexander & Dawson, 2019). On the survey, the Collaboration category focused on three HLPs, with three survey questions about each Collaboration HLP to address the participants' collaboration experiences. The second category on the survey is Assessment, which has three HLPs. The survey included three questions on the participants' experiences with each assessment HLP, for a total of nine questions about assessment HLPs.

Social-Emotional/Behavioral is the third HLP category and comprises four HLPs. This study's survey included three questions on the participants' experiences with each HLP, with a total of 12 questions on social-emotional/behavioral HLPs. Instruction is the fourth and largest category, with 12 HLPs. As elsewhere in the survey, each Social-Emotional/Behavioral HLP had three questions on the participants' experiences with the HLP. In total, there were 36 questions on Instruction. See Figure 3 for a sample item with

a response frame. In the last three survey questions, the participants could indicate their willingness to take part in a small focus group to discuss their preservice teaching experiences and instructional practices.

Figure 3

Response Frame for Each High-Leverage Practices Question

Sample HLP: Collaborate with professionals to increase student success.

5. Were you aware this was classified as a high-leverage practice?

- Yes
- No

6. Where did you learn this practice?

- Teacher preparation
- Professional development (PD)
- Mentorship
- Have not yet learned

7. How often do you use this practice?

- At least once a day
- At least once a week
- At least once a month
- At least once a quarter
- At least once a semester
- At least once a year
- Never

Pilot Test of High-Leverage Practices Survey

As a pilot test, a small group of participants received the researcher's contact information, the project description, the informed consent form, and the link to the survey instrument. After finishing the survey, the sample of seven special education teachers provided feedback on the clarity of the instructions and survey prompts. The teachers also

shared how long it took them to complete the survey. The participants reported that the survey was clear and to the point and took them 7 to 10 minutes to complete.

High-Leverage Practices Survey Content Validity and Reliability

Content validity is a nonstatistical type of validity that involves examining the survey content to determine if it covers a representative sample of the topic to be measured (Wolf et al., 2016). Researchers establish validity by determining if the survey instrument measures what they meant it to measure. High content validity indicates that the survey addresses the topic fully for the targeted purpose. Reliability is the internal consistency of a survey (Wolf et al., 2016) reflecting the extent to which the research results will hold when participants respond over time or to similar questions.

Enhancing the validity and reliability of this study occurred in multiple ways. Special education HLPs have received extensive study through national organizations, such as the CEEDAR Center and the CEC. Alexander (Alexander & Dawson, 2019) prepared a matrix to study teacher interaction with the HLPs, which served as a foundation for the survey developed for this study. Most notably, the use of the 22 special education HLPs studied was as written. Their presentation was in the same order with the exact wording used by the CEEDAR Center, the CEC, and Alexander. There were no wording or phrasing changes.

The survey did not allow for a measurement of statistical reliability. Improving reliability occurred through clarity and a pilot test with practicing teachers familiar with the content. Means of enhancing clarity included: (a) the format of the survey was a pattern with repeated questions addressing teacher experiences with each of the 22 HLPs,

(b) double negatives were not used, (c) the scale was not flipped or changed throughout the survey, and (d) only one HLP appeared on each page of the survey.

High-Leverage Practices Focus Group Questions

The focus group portion of the study enabled the participants to share their experiences and provide insight into the HLPs taught in their teacher preparation programs and used in their classrooms. Information uncovered in the discussions included whether the participants knowingly used HLPs in their classrooms and, if not, what they did use. The focus groups provided context and insight into the survey results by allowing participants to elaborate on their opinions and perspectives.

The focus groups allowed a small group of early-career special education teachers to discuss what practices they used in their classrooms. The collected data enabled a deeper and more textured understanding of the participants' lived experiences before entering the classroom and while teaching and why they used certain classroom practices. The discussions began with broad inquiries before moving to more specific questions. The focus groups lasted approximately 50 minutes each. See Figure 4 for the list of focus group questions.

Figure 4

List of Focus Group Questions

Interview Outline
Welcome. Thank you for participating in this focus group. I am learning more about HLPs myself, and I appreciate you sharing your experiences to help me deepen my understanding. Will you please introduce yourself? (Name, what you do right now, how many years you have been teaching, where you teach, what grade you teach) Reflect on your teacher preparation program. What memorable strategies or practices were you exposed to that you use currently in your classroom? People may have different understandings of HLPs. Will you share your understanding of what HLPs are, how they are used in teacher education, and how they might translate into the classroom setting? What practices do you use the most in your daily practice as a special education teacher? What works best for you? Where did you learn and practice that strategy? What did you learn in your preparation that has been most useful and effective in your job as a teacher? What do you wish you would have learned in your teacher preparation program? What things do you do to collaborate with other teachers that you find to be highly effective? Where did you learn and practice these strategies? What things do you do to assess student learning that you find to be highly effective? Where did you learn and practice these strategies? What things do you do to support your students' social-emotional learning and/or behavioral needs that you find to be highly effective? Where did you learn and practice these strategies? What instructional strategies do you find to be highly effective? Where did you learn and practice these strategies?

Procedures

This section presents the study's procedures, including information on the research timeline, IRB approval, participant recruitment, and data collection. See Table 1 for the timeline for completing this research.

Table 1

Timeline of Research

Action	Date
Proposal meeting held with Committee	April 25, 2022
IRB approval effective	April 29, 2022
IRB and research approval granted from Washoe County School District	May 3, 2022 (Approval expires June 15, 2022)
List of teachers in their first five years at WCSD obtained from Human Resources (Jim Grace, contact in Human Resources)	May 3, 2022
Introductory email and request for participation in survey sent to all teachers on list provided by WCSD Human Resources	May 3, 2022
Second email sent inviting new teachers to participate in survey	May 10, 2022
Survey closed for participation	May 17, 2022
First focus group held	May 26, 2022
Second focus group held	June 2, 2022

Participant Recruitment

This study received IRB approval from the University of Nevada, Reno, and approval from the Washoe County School District (WCSD). Next, WCSD human resources professionals identified and provided the names and contact information of special education teachers in their first 5 years in the district. These early-career teachers

held various special education positions, including Pre-K, elementary, and secondary classroom instructors.

The recruitment for the focus group occurred in the last question of the survey. The early career teachers were able to self-select to participate in a focus group to further talk about the practices that they utilize in their classroom. When teachers agreed to participate, they were sent available times and a zoom link so they could select the time that worked best for them. All participants self-selected into the focus groups. There was no exclusion criteria.

Data Collection

Using the email addresses provided in the district directory, the researcher sent invitations to participate to all teachers in their first 5 years. The emails included a cover letter (see Appendix A), the district approval letter (see Appendix A), and an online survey on their preservice teacher experiences and HLP use and knowledge (see Appendix B). The teachers had 2 weeks to respond to the survey, receiving a reminder email (see Appendix A) and an additional link to the survey after 1 week. Teachers could start the survey and return to finish it later. As long as the survey was open on their desktop or cellular device, it would not time out. At the end of the survey, the respondents could indicate their willingness to participate in a focus group via Zoom to discuss their classroom experiences further.

One teacher responded to the invitation by stating that although she was new to WCSD, she was not new to teaching. She did not participate and did not receive a second invitation. Because the researcher did not know who responded to the survey unless they

agreed to participate in the focus group and provided their information, all eligible early-career special education teachers received reminder emails (see Appendix A).

The early career teachers who agreed to participate in the focus groups were sent a menu of available times to participate along with the zoom link. The teachers who participated in the survey had the opportunity to indicate that they were interested in participating in the focus groups. There were no exclusion criteria, nor was additional recruitment undertaken. The early career teachers that participated in the focus groups were a function of the time that they were available for the conversation. The teachers came from various educational backgrounds, including traditional preparation and ARL. One group comprised traditionally prepared and ARL teachers, and one included only secondary ARL teachers. The focus group participants received a day and time to participate in the Zoom meeting. The researcher facilitated the focus groups, remaining mindful of positionality and its potential impact on the teachers' willingness to share openly. The participants shared their experiences, encouraged one another, and built off each other's input.

The focus group participants had time to interact and respond to the posed questions. The general flow of responses was one at a time, in a pattern, with some participants providing additional insight after the other teachers had responded. There was a conversational feel to the focus groups, with all participants being mindful of letting everyone have a chance to give their insight. One focus group lasted 43 minutes, and the other lasted 61 minutes. The focus groups began with the researcher welcoming the participants and thanking them for their time. Next, the participants introduced themselves, where they taught, how many years they had been classroom teachers, and

whether they were traditionally or ARL-prepared. The researcher followed the script of the prescribed focus group questions (see Figure 4), allowing all participants to share their experiences. Zoom was the instrument used to record the focus groups, with the recordings subsequently transcribed. Upon leaving the meeting the participants were satisfied with their responses, therefore no member checks were completed.

Ethical Considerations

The participants needed to provide their names and characteristics to proceed with the study. After collecting, cleaning, and organizing the data, the researcher replaced identifying information with numbers nonidentifiable to anyone besides the researcher. The original file containing any identifiable teacher information remained on a password-protected computer system, and data destruction occurred after study completion.

Chapter 4: Results

The purpose of this exploratory, descriptive study was to examine which HLPs early-career special education teachers know and use in their classrooms. Another area of exploration was which HLPs they learned in teacher preparation or professional development and which they used in their daily work. Finally, this study focused on how teachers described their best teaching practices to determine if the strategies were part of the four core HLPs (Collaboration, Assessment, Social-Emotional/Behavior, and Instruction).

Research Questions

RQ1: Do early-career teachers know the high-leverage teaching practices?

- 1a. Is there a difference between early-career teachers who are traditionally prepared and alternative route to licensure teachers' knowledge of high-leverage practices?
- 1b. Is there a difference between elementary and secondary early-career special education teachers' knowledge of the high-leverage practices?

RQ2: In instances where teachers demonstrate knowledge of high-leverage practices, where did they learn these strategies?

- 2a. Is there a difference between where traditionally prepared and alternative route to licensure early-career special education teachers learn the high-leverage practices?
- 2b. Is there a difference between where elementary and secondary early-career special education teachers learn the high-leverage practices?

RQ3: How often do early-career special education teachers report using high-leverage practices in their classrooms?

RQ4: What do early-career special education teachers report knowing about high-leverage practices? Which high-leverage practices do early-career special education teachers use in their classrooms and why?

Approach to Data Analysis

Two types of analysis were appropriate to answer RQs 1, 2 and 3 regarding which HLPs early-career special education teachers reported knowing and using in their classrooms. First, this section presents a discussion of the descriptive analysis results (percentages). These responses help in understanding which of the 22 HLPs were topics in preservice teaching programs and which of the 22 HLPs early-career special education teachers currently use in their classrooms.

Second, survey relied on categorical and demographic data. Statistical analyses using Chi-square goodness of fit tests were appropriate to determine differences in the responses between groups of participants on the 22 HLPs—specifically, early-career special education teachers prepared in traditional programs compared to their ARL colleagues and a comparison between elementary and secondary teachers. RQ 4 employed qualitative analysis from data obtained in the two focus groups.

Participants' Demographics

Of the 348 early-career teachers who received the survey, 51 responded. The school district considers early-career teachers to be teachers new to the district. Some of the 348 potential participants were new to the school district but had more than 5 years of experience elsewhere. However, the only indication was from teachers who replied to the

survey and identified themselves as new to the district but not new to teaching. Due to the discrepant definitions, there was no way to know how many eligible early-career teachers received the survey, making it difficult to calculate a return rate.

The demographic data showed that 29 of 51 respondents (56.86%) received traditional teacher education program preparation, and 22 (43.13%) received their preparation in an ARL program. Twenty-nine (56.86%) reported teaching Grades K–5, and 22 (43.13%) taught Grades 6–12. Because this study focused on early-career teachers, years of experience was an essential disclosure. Nine respondents were in their first year of teaching, 14 were in their second or third year, and 29 had taught for 4 to 5 years. See Table 2 for the participants' demographic data overall and by type of teacher preparation.

Table 2

Demographics for Total High-Leverage Practices Survey Respondents and by Teacher Preparation

Demographic variables	Total sample $N = 51$ *n* (%)	Traditional preparation $N = 29$ *n* (%)	ARL preparation $N = 22$ *n* (%)
Grade level			
K–5 elementary	29 (56.86)	19 (67.86)	9 (40.91)
6–12 secondary	22 (43.14)	9 (32.14)	13 (59.09)
Teaching experience			
First year	29 (56.86)	5 (17.24)	4 (18.18)
2–3 years	22 (42.14)	8 (27.59)	6 (27.27)
4–5 years	29 (56.86)	16 (55.17)	12 (54.54)
Type of position			
Resource	27 (51.92)	10 (34.48)	17 (77.27)
Strategies	14 (26.9)	11 (37.93)	2 (9.09)
Comprehensive life skills (CLS)	4 (7.69)	2 (6.90)	2 (9.09)
Emotional-behavioral disorders (EBD)	4 (7.69)	3 (10.34)	1 (4.55)
Early childhood (EC)	3 (5.77)	3 (10.34)	0 (0.00)

Note. $N = 51$

Early-Career Special Education Teachers Knowledge of High-Leverage Practices (RQ1)

HLP Survey organization was by the four categories of HLPs: Collaboration (3 HLPs), Assessment (3 HLPs), Social/Behavior Learning (4 HLPs), and Instruction (12 HLPs). The reporting of results is by the HLP categories and the individual HLPs within these categories. For each of the 22 HLPs in the four categories, the first question was, Did you have knowledge that this (e.g., collaborate with professionals to increase student

success) was classified as a high-leverage teaching practice? Teachers responded a = *yes* or b = *no*.

A Chi-square test of goodness of fit test was an appropriate measurement to determine if there were differences in HLP knowledge between early-career subgroups. The results showed there were no differences between traditionally prepared and ARL early-career teachers in their knowledge of HLPs: Collaboration ($X^2(10, N = 76) = 0.5647, p > .05$); Assessment ($X^2(10, N = 78) = 0.066, p > .05$); SEL ($X^2(10, N = 103) = 0.4168, p > .05$); and Instruction ($X^2(10, N = 78) = 1.142, p > .05$). See Appendix C for Chi-square tables.

There were no statistical differences in reported knowledge of HLPs between elementary and secondary early-career special education teachers. Chi-square results were as follows: Collaboration HLPs (X^2 (10, $N = 77$) = 0.1969, $p > .05$; Assessment (X^2 (10, $N = 76$) = 0.1013, $p > .05$; SEL (X^2 (10, $N = 101$) = 0.4275, $p > .05$; and Instruction ($X^2(10, N = 76) = 2.35, p > .05$). See Appendix C.

Although there were no statistical differences between subgroups, the descriptive findings were notable. Table 3 shows that a greater percentage of ARL teachers reported knowing the three Collaboration HLPs than early-career teachers from traditional preparation programs. Secondary teachers reported knowing all three Collaboration HLPs at a higher percentage than elementary teachers. Only 38.46% of the elementary teachers reported knowledge of Collaboration 1 (collaborate with professionals to increase student success), and 33.33% of the early-career teachers from traditional programs reported knowing the Collaboration HLPs.

Table 3

Early-Career Teachers' Self-Reported Knowledge of Collaboration High-Leverage Practices

Respondents	High-leverage practices		
	Collaboration 1 *N* = 49 *n* (%)	Collaboration 2 *N* = 47 *n* (%)	Collaboration 3 *N* = 47 *n* (%)
Overall	22 (44.90)	26 (55.32)	29 (61.70)
Elementary	10 (38.46)	11 (45.83)	14 (58.33)
Secondary	12 (54.55)	15 (68.18)	15 (68.18)
Traditional	9 (33.33)	14 (53.85)	14 (53.85)
ARL	12 (57.14)	12 (57.14)	15 (71.43)

Table 4 shows the early-career teachers' reported knowledge of the Assessment HLPs. More than 50% of early-career special education teachers reported knowing that these three assessment practices were HLPs. The early-career teachers reported being most aware of Assessment 1 (use multiple sources of information to develop a comprehensive understanding of a student's strengths and needs). Higher percentages of ARL teachers reported knowing the HLPs in all three Assessment categories than traditionally prepared teachers.

Table 4

Early-Career Teachers' Self-Reported Knowledge of Assessment High-Leverage Practices

Respondents	High-leverage practices		
	Assessment 1 *N* = 43 *n* (%)	Assessment 2 *N* = 43 *n* (%)	Assessment 3 *N* = 42 *n* (%)
Overall	27 (62.79)	25 (58.14)	26 (61.90)
Elementary	13 (56.52)	12 (52.17)	14 (60.87)
Secondary	13 (68.42)	12 (63.16)	12 (66.67)
Traditional	15 (57.69)	13 (50.00)	14 (53.85)
ARL	12 (70.59)	12 (70.59)	12 (75.00)

Half of the early-career special education teachers reported knowing that the SEL/Behavior practices were HLPs. Of the four SEL/Behavior HLPs, 67.44% of the early-career teachers reported being knowledgeable about HLP 2 (provide positive and constructive feedback to guide students' behavior). More secondary teachers reported knowing the SEL/Behavior HLPs than elementary teachers (see Table 5).

Table 5

Early-Career Teachers' Self-Reported Knowledge of Social-Emotional Learning/Behavior High-Leverage Practices

Respondents	High-leverage practices for social-emotional learning and behavior			
	SEL/Beh 1 *N* = 43 *n* (%)	SEL/Beh 2 *N* = 43 *n* (%)	SEL/Beh 3 *N* = 43 *n* (%)	SEL/Beh 4 *N* = 43 *n* (%)
Overall	26 (60.47)	29 (67.44)	24 (55.81)	24 (57.14)
Elementary	12 (52.17)	15 (62.22)	11 (47.83)	11 (50.00)
Secondary	13 (68.42)	13 (68.42)	13 (68.42)	13 (68.42)
Traditional	15 (57.69)	16 (61.54)	15 (57.69)	13 (52.00)
ARL	11 (64.71)	13 (76.47)	9 (52.94)	11 (64.71)

Early-career special education teachers' reported knowledge of the 12 Instruction HLPs. More secondary teachers reported knowing the 12 instructional practices were HLPs than elementary school teachers. A concerning finding was that less than 50% of elementary teachers reported knowing Instruction HLPs 4 (teach cognitive and metacognitive strategies to support learning and independence), 9 (use assistive and instructional technologies), 10 (provide intensive instruction), and 11 (teach students to maintain and generalize new learning across time and settings; see Table 6).

Where Did Teachers Learn the High-Leverage Practices? (RQ2)

It is helpful to the field to know where the early-career special education teachers who reported knowledge of the HLPs learned them. The HLP survey offered three choices: (a) teacher preparation, (b) professional development, and (c) mentorship. Although not included in this study's analysis, mentorship appears in the following descriptive tables. The reason for the removal is that it was unclear if mentorship was part of teacher preparation (e.g., during student teaching) or occurred while the teacher was in the classroom.

Table 6

Early-Career Teachers' Self-Reported Knowledge of Instruction High-Leverage Practices

Respondents	Ins 1 *N* = 42 *n* (%)	Ins 2 *N* = 42 *n* (%)	Ins 3 *N* = 42 *n* (%)	Ins 4 *N* = 42 *n* (%)	Ins 5 *N* = 42 *n* (%)	Ins 6 *N* = 42 *n* (%)	Ins 7 *N* =42 *n* (%)	Ins 8 *N* = 42 *n* (%)	Ins 9 *N* = 42 *n* (%)	Ins 10 *N* = 42 *n* (%)	Ins 11 *N* = 42 *n* (%)	Ins 12 *N* = 36 *n* (%)
Overall	27 (64.29)	27 (64.29)	23 (56.10)	21 (53.85)	23 (58.97)	23 (58.97)	22 (57.89)	23 (60.53)	21 (55.26)	20 (54.05)	20 (55.56)	23 (63.89)
Elementary	14 (63.64)	14 (63.64)	10 (47.62)	8 (40.00)	10 (50.00)	11 (55.00)	10 (50.00)	10 (50.00)	8 (40.00)	8 (42.11)	8 (44.44)	10 (55.56)
Secondary	13 (68.42)	13 (68.42)	13 (68.42)	13 (72.22)	13 (72.22)	12 (66.67)	12 (70.59)	13 (72.22)	13 (72.22)	12 (66.67)	12 (66.67)	13 (72.22)
Traditional	15 (60.00)	15 (60.00)	14 (56.00)	13 (52.00)	14 (56.00)	14 (56.00)	13 (52.00)	15 (62.50)	14 (58.33)	12 (52.17)	12 (54.55)	14 (63.64)
ARL	12 (70.59)	12 (70.59)	9 (56.25)	8 (57.14)	9 (64.29)	9 (64.29)	9 (69.23)	8 (57.14)	7 (50.00)	8 (57.14)	8 (57.14)	9 (64.29)

The findings for where traditional and ARL early-career special education teachers learned the SEL HLPs ($X^2(30, N = 97) = 17.827, p > .05$) were statistically significant. Traditionally prepared teachers reported learning the SEL/Behavior HLPs through their teacher preparation programs: SEL/Behavior 1 (65.38%), SEL/Behavior 2 (73.08%), SEL/Behavior 3 (57.69%), and SEL/Behavior 4 (52.00%). ARL teachers' reports were SEL/Behavior 1 (35.29%), SEL/Behavior 2 (29.41%), SEL/Behavior 3 (35.29%), and SEL/Behavior 4 (47.06%). There were no statistical differences in where traditional and ARL early-career teachers reported learning the Collaboration ($X^2(30, N = 88) = 12.4566, p = .052524$), Assessment ($X^2(30, N = 92) = 2.1582, p = .904592$), and Instruction HLPs ($X^2(30, N = 124) = 5.2419, p = .812731$). Although there was only one difference between subgroups (SEL), the descriptive findings show a pattern of traditionally prepared teachers identifying teacher preparation as where they most often learned these practices. There was more variation in where the ARL teachers identified learning the HLPs.

A Chi-square test of goodness of fit test was a means to determine if there were differences between where elementary and secondary early-career special education teachers learned the HLPs (Collaboration, Assessment, SEL, and Instruction). The results for where elementary and secondary teachers learned the Collaboration HLPs ($X^2(30, N = 87) = 13.1578$), $p < .05$, were statistically significant. The data showed that secondary teachers reported learning Collaborations 2 and 3 primarily from their teacher preparation programs, whereas elementary teachers reported learning the Collaboration HLPs through other avenues. Although there was no statistical difference in where elementary early-career teachers and secondary early-career teachers reported learning the other HLPs—

Assessment ($X^2(30, N = 92) = 2.9496, p > .05$; SEL ($X^2(30, N = 120) = 8.412, p > .05$; Instruction ($X^2(30, N = 92) = 2.9496, p > .05$—there were descriptive differences.

Collaboration High-Leverage Practices

Teacher preparation was the most likely learning environment for traditional teachers, a seemingly obvious finding given that their primary teacher preparation was in a traditional program. ARL teachers were likelier to have learned the HLPs in a balanced combination of teacher preparation and professional development. This finding was also not surprising, given that ARL teachers typically have a more blended preparation (see Table 7).

Early-career teachers might have learned these practices without knowing they were HLPs. For Collaboration 3, 14 traditionally prepared teachers reported knowing that collaborating with families to support student learning and secure needed services was an HLP. However, 22 teachers reported where they learned this practice. This finding suggests that teachers are more knowledgeable of the practices that are HLPs than of the HLP label for those practices (see Table 7).

Table 7

Early-Career Special Education Teachers' Self-Report of Where They Learned the Collaboration High-Leverage Practices

Where they learned high-leverage practices	High-leverage practices: Collaboration		
	Collaboration 1 $N = 48$ *n* (%)	Collaboration 2 $N = 48$ *n* (%)	Collaboration 3 $N = 48$ *n* (%)
Traditional	27	26	26
Knowledge of HLP	9 (33.33)	14 (53.85)	14 (53.85)
Teacher preparation	10 (37.04)	13 (50.00)	17 (65.38)
Professional development	8 (29.63)	2 (7.69)	1 (3.85)
Mentorship	5 (18.52)	7 (26.92)	4 (15.38)
ARL	21	21	21
Knowledge of HLP	12 (57.14)	12 (57.14)	15 (71.43)
Teacher preparation	5 (23.81)	6 (28.57)	8 (14.29)
Professional development	9 (42.86)	6 (28.57)	3 (38.10)
Mentorship	5 (9.52)	7 (33.33)	8 (9.52)

Descriptive data for the Collaboration HLPs showed that elementary and secondary teachers learned Collaboration 2 (organize and facilitate effective meetings with professionals and families) and Collaboration 3 (collaborate with families to support student learning and secure needed services) primarily through teacher preparation. It is interesting to note that both elementary and secondary teachers identified learning Collaboration 1 (collaborate with professionals to increase student success) through professional development. This finding could be because professional development gives teachers hands-on experiences collaborating with other professionals (see Table 8).

Table 8

Early-Career Elementary and Secondary Special Education Teachers' Self-Report of Where They Learned the Collaboration High-Leverage Practices

Where they learned high-leverage practices	High-leverage practices: Collaboration		
	Collaboration 1 *n* (%)	Collaboration 2 *n* (%)	Collaboration 3 *n* (%)
Elementary	26	24	24
Knowledge of HLP	10 (38.46)	11 (45.83)	14 (58.33)
Teacher preparation	8 (30.77)	9 (37.50)	13 (54.17)
Professional development	10 (38.46)	4 (16.67)	1 (4.17)
Mentorship	4 (15.38)	7 (29.17)	7 (29.17)
Secondary	22	22	22
Knowledge of HLP	12 (54.55)	15 (68.18)	15 (68.18)
Teacher preparation	6 (27.27)	10 (45.45)	11 (50.00)
Professional development	8 (36.36)	4 (18.18)	3 (13.64)
Mentorship	6 (27.27)	6 (27.27)	5 (22.73)

Assessment High-Leverage Practices

Traditionally prepared early-career teachers reported gaining knowledge of the Assessment HLPs through their teacher preparation program. ARL early-career teachers reported learning about Assessment 1 (use multiple sources of information to develop a comprehensive understanding of a student's strengths and needs) and Assessment 2 (interpret and communicate assessment information with stakeholders to collaboratively design and implement educational programs) HLPs most often in professional development (see Table 9).

Table 9

Early-Career Special Education Teachers' Self-Report of Where They Learned the Assessment High-Leverage Practices

Where they learned high-leverage practices	High-leverage practices: Assessment		
	Assessment 1 *N* = 43 *n* (%)	Assessment 2 *N* = 43 *n* (%)	Assessment 3 *N* = 42 *n* (%)
Elementary	26	26	26
Knowledge of HLP	15 (57.69)	13 (50.00)	14 (58.85)
Teacher preparation	16 (61.54)	12 (46.15)	15 (57.69)
Professional development	5 (19.23)	5 (19.23)	4 (15.38)
Mentorship	2 (7.69)	4 (15.38)	3 (11.54)
Secondary	17	17	16
Knowledge of HLP	12 (70.59)	12 (70.59)	12 (75.00)
Teacher preparation	6 (35.29)	4 (23.53)	8 (47.06)
Professional development	7 (41.18)	6 (35.29)	4 (23.53)
Mentorship	4 (23.53)	7 (41.18)	5 (29.41)

All early-career teachers reported learning the Assessments 1 and 3 HLPs primarily through their teacher preparation programs; the exception was Assessment 2 (interpret and communicate assessment information with stakeholders to collaboratively design and implement educational programs). The secondary teachers reported learning Assessment 2 through mentorship. However, it was unclear if mentorship occurred during student teaching or from a district mentor in their classrooms (see Table 10).

Table 10

Early-Career Elementary and Secondary Special Education Teachers' Self-Report of Where They Learned the Assessment High-Leverage Practices

Where they learned high-leverage practices	High-leverage practices: Assessment		
	Assessment 1 $N = 48$ *n* (%)	Assessment 2 $N = 48$ *n* (%)	Assessment 3 $N = 48$ *n* (%)
Elementary	23	23	23
Knowledge of HLP	13 (56.52)	12 (52.17)	14 (60.87)
Teacher preparation	13 (56.52)	10 (43.48)	13 (56.52)
Professional development	5 (21.74)	7 (30.43)	5 (21.74)
Mentorship	3 (13.04)	3 (13.04)	3(13.04)
Secondary	19	19	18
Knowledge of HLP	13 (68.42)	12 (63.16)	12 (66.67)
Teacher preparation	8 (42.11)	5 (21.05)	10 (52.63)
Professional development	7 (36.84)	4 (21.05)	3 (15.79)
Mentorship	3 (15.79)	8 (42.11)	4 (21.05)

Social-Emotional/Behavior High-Leverage Practices

The results showed a statistically significant difference between where traditionally prepared and ARL teachers learned the SEL/Behavior HLPs. Traditionally prepared teachers reported learning SEL/Behavior HLPs through teacher preparation: SEL/Behavior 1 (65%), SEL/Behavior 2 (73%), SEL/Behavior 3 (57.69%), and SEL/Behavior 4 (52.00%); ARL teachers reported learning them through other methods. The reported teacher preparation percentages were SEL/Behavior 1 (35.29%), SEL/Behavior 2 (35.29%), SEL/Behavior 3 (52.94%), and SEL/Behavior 4 (23.53%). Similar to the descriptive results (see Table 10), Table 11 shows that although teachers might not report knowing that a practice is an HLP, they might still know and report

where they learned it. Fifteen early-career teachers reported knowing that SEL/Behavior 1 was an HLP, and 23 early-career teachers could report where they learned the practice (see Table 11).

Table 11

Early-Career Special Education Teachers' Self-Report of Where They Learned the Social-Emotional Learning/Behavior High-Leverage Practices

Where they learned high-leverage practices	High-leverage practices: Social-Emotional Learning/Behavior			
	SEL/Beh 1 $N = 43$ *n* (%)	SEL/Beh 2 $N = 43$ *n* (%)	SEL/Beh 3 $N = 43$ *n* (%)	SEL/Beh 4 $N = 42$ *n* (%)
Traditional	26	26	26	26
Knowledge of HLP	15 (65.38)	19 (73.08)	15 (57.69)	13 (52.00)
Teacher preparation	17 (65.38)	19 (73.08)	15 (57.69)	13 (52.00)
Professional development	3 (11.54)	0	5 (19.23)	3 (12.00)
Mentorship	3 (11.54)	4 (15.38)	3 (11.54)	6 (24.00)
ARL	17	17	17	17
Knowledge of HLP	11 (64.71)	13 (76.47)	9 (52.94)	11 (64.71)
Teacher preparation	6 (35.29)	6 (35.29)	6 (35.29)	4 (23.53)
Professional development	6 (35.29)	5 (29.41)	6 (35.29)	8 (47.06)
Mentorship	5 (29.41)	6 (35.29)	4 (23.53)	4 (23.53)

All elementary and secondary early-career special education teachers reported learning the SEL/Behavior HLP strategies through their teacher preparation, as follows. SEL/Behavior 1: elementary (60.87%), secondary (42.11%); SEL/Behavior 2: elementary (65.22%), secondary (47.37%); SEL/Behavior 3: elementary (52.17%), secondary (47.37%); and SEL/Behavior 4; elementary (52.00%), secondary (36.84%). The professional development reports were SEL/Behavior 1: elementary (870%), secondary (36.84%); SEL/Behavior 2: elementary (8.70%), secondary (15.76%); SEL/Behavior 3:

elementary (30.43%), secondary (21.50%); and SEL/Behavior 4: elementary (22.73%), secondary (31.58%; see Table 12).

Table 12

Early-Career Elementary and Secondary Special Education Teachers' Self-Report of Where They Learned the Social-Emotional Learning/Behavior High-Leverage Practices

Where they learned high-leverage practices	High-leverage practices: Social-Emotional Learning/Behavior			
	SEL/Beh 1 $N = 48$ *n* (%)	SEL/Beh 2 $N = 48$ *n* (%)	SEL/Beh 3 $N = 48$ *n* (%)	SEL/Beh 4 $N = 48$ *n* (%)
Elementary	23	23	23	22
Knowledge of HLP	12 (52.17)	15 (65.22)	11 (47.83)	11 (50.00)
Teacher preparation	14 (60.87)	16 (69.57)	12 (52.17)	9 (40.91)
Professional development	2 (8.70)	2 (8.70)	7 (30.43)	5 (22.73)
Mentorship	5 (21.74)	3 (13.04)	1 (4.35)	7 (31.82)
Secondary	19	19	19	19
Knowledge of HLP	13 (68.43)	13 (68.42)	13 (68.42)	13 (68.42)
Teacher preparation	8 (42.11)	9 (47.37)	9 (47.37)	7 (36.84)
Professional development	7 (36.84)	3 (15.76)	4 (21.5)	6 (31.58)
Mentorship	3 (15.79)	6 (31.58)	5 (26.32)	3 (15.79)

Instruction High-Leverage Practices

Traditionally prepared early-career special education teachers reported learning the 12 Instruction HLPs primarily through teacher preparation, whereas ARL teachers learned them through various avenues. This finding was similar to the Collaboration, Assessment, and SEL/Behavior HLPs.

The highest percentage (58.82%) of ARL teachers reported learning Instruction HLP 2 (systematically design instruction toward specific learning goal) through their ARL teacher preparation programs. As in other findings, early-career teachers reported

that although they might not know an instructional practice was an HLP, they learned it in a traditional program or via professional development. Fifteen traditionally prepared teachers knew Instruction 1 (collaborate with professionals to increase student success) was an HLP, and 23 participants were able to identify where they learned this practice (see Table 13). This finding suggests that the participants learned an HLP but did not know it was considered as such in the field.

All elementary early-career special education teachers identified learning the 12 Instruction HLPs in teacher preparation programs. The secondary teachers also reported learning the Instruction HLPs primarily in teacher preparation programs, with two exceptions: Instruction 9 (use assistive and instructional technologies) and Instruction 11 (teach students to maintain and generalize new learning across time and settings). It could be that HLPs are learned and practiced more at the secondary level, where students begin using strategies like assistive technology to learn. As a result, secondary teachers recognize professional development as where they learned Instruction HLPs (see Table 14).

Table 13

Early-Career Special Education Teachers' Self-Report of Where They Learned the Instruction High-Leverage Practices

Where high-leverage practices were learned	High-leverage practices: Instruction											
	Ins 1 *N* = 42 *n* (%)	Ins 2 *N* = 42 *n* (%)	Ins 3 *N* = 41 *n* (%)	Ins 4 *N* = 39 *n* (%)	Ins 5 *N* = 39 *n* (%)	Ins 6 *N* = 39 *n* (%)	Ins 7 *N* =39 *n* (%)	Ins 8 *N* = 38 *n* (%)	Ins 9 *N* = 38 *n* (%)	Ins 10 *N* = 37 *n* (%)	Ins 11 *N* = 36 *n* (%)	Ins 12 *N* = 36 *n* (%)
Traditional	22	22	21	20	20	20	20	20	20	20	19	18
Knowledge of HLP	14 (63.64)	14 (63.64)	10 (47.62)	8 (40.00)	8 (40.00)	10 (50.00)	11 (55.00)	10 (50.00)	10 (50.00)	8 (40.00)	8 (42.00)	8 (44.44)
Teacher prep	14 (63.64)	13 (59.09)	14 (66.67)	10 (50.00)	10 (50.00)	15 (75.00)	14 (70.00)	15 (75.00)	11 (55.00)	9 (45.00)	10 (52.63)	11 (61.11)
Prof dev	3(13.64)	5 (22.73)	2 (9.52)	5 (25.00)	5 (25.00)	3 (15.00)	2 (10.00)	1 (5.00)	5 (25.00)	4 (20.00)	2 (10.53)	2 (11.11)
Mentorship	3 (13.64)	1 (4.55)	4 (19.05)	2 (10.00)	2 (10.00)	1 (5.00)	3 (15.00)	1 (5.00)	3 (15.00)	5 (25.00)	4 (21.05)	2 (11.11)
ARL	19	19	19	18	18	18	17	18	18	18	18	18
Knowledge of HLP	13 (68.42)	13 (68.42)	13 (68.42)	13 (72.22)	13 (72.22)	12 (66.67)	12 (70.59)	13 (72.22)	13 (72.22)	12 (66.67)	12 (66.67)	13 (72.22)
Teacher prep	8 (42.11)	13 (72.22)	11 (57.89)	8 (44.44)	8 (44.44)	12 (66.67)	9 (50.00)	10 (58.82)	6 (33.33)	7 (38.89)	6 (33.33)	10 (55.56)
Prof dev	7 (36.84)	4 (22.22)	4 (21.05)	6 (33.33)	4 (22.22)	3 (16.67)	6 (33.33)	3 (17.65)	7 (38.89)	4 (22.22)	7 (38.89)	3 (16.67)
Mentorship	3 (15.79)	1 (5.56)	2 (10.53)	1 (5.56)	5 (27.78)	2 (11.11)	2 (11.11)	4 (13.53)	4 (22.22)	5 (27.78)	3 (16.67)	4 (22.22)

Frequency of High-Leverage Practices Use (RQ3)

An important finding of this exploratory, descriptive study was the frequency with which early-career special education teachers reported using HLPs in their classrooms. Although there were insufficient data to run a Chi-square goodness of fit test and compare the frequency of use across subgroups, early-career teachers' implementation of HLPs was of interest. Because teachers might not use every HLP every day, the researcher combined teachers' reports of using an HLP daily or weekly. Most (80.70%) traditionally prepared teachers reported using Collaboration 1 (collaborate with professionals to increase student success) daily or weekly. These results indicate that 19.30% of traditionally prepared teachers are not collaborating with other professionals weekly, perhaps waiting a month or more before collaborating with colleagues to benefit their students.

Table 14

Early-Career Elementary and Secondary Special Education Teachers' Self-Report of Where They Learned the Instruction High-Leverage Practices

Where high-leverage practices were learned	High-leverage practices: Instruction											
	Ins 1 *N* = 42 *n* (%)	Ins 2 *N* = 42 *n* (%)	Ins 3 *N* = 41 *n* (%)	Ins 4 *N* = 39 *n* (%)	Ins 5 *N* = 39 *n* (%)	Ins 6 *N* = 39 *n* (%)	Ins 7 *N* =39 *n* (%)	Ins 8 *N* = 38 *n* (%)	Ins 9 *N* = 38 *n* (%)	Ins 10 *N* = 37 *n* (%)	Ins 11 *N* = 36 *n* (%)	Ins 12 *N* = 36 *n* (%)
Traditional	22	22	21	20	20	20	20	20	20	20	19	18
Knowledge of HLP	14 (63.64)	14 (63.64)	10 (47.62)	8 (40.00)	8 (40.00)	10 (50.00)	11 (55.00)	10 (50.00)	10 (50.00)	8 (40.00)	8 (42.00)	8 (44.44)
Teacher prep	14 (63.64)	13 (59.09)	14 (66.67)	10 (50.00)	10 (50.00)	15 (75.00)	14 (70.00)	15 (75.00)	11 (55.00)	9 (45.00)	10 (52.63)	11 (61.11)
Prof dev	3 (13.64)	5 (22.73)	2 (9.52)	5 (25.00)	5 (25.00)	3 (15.00)	2 (10.00)	1 (5.00)	5 (25.00)	4 (20.00)	2 (10.53)	2 (11.11)
Mentorship	3 (13.64)	1 (4.55)	4 (19.05)	2 (10.00)	2 (10.00)	1 (5.00)	3 (15.00)	1 (5.00)	3 (15.00)	5 (25.00)	4 (21.05)	2 (11.11)
ARL	19	19	19	18	18	18	17	18	18	18	18	18
Knowledge of HLP	13 (68.42)	13 (68.42)	13 (68.42)	13 (72.22)	13 (72.22)	12 (66.67)	12 (70.59)	13 (72.22)	13 (72.22)	12 (66.67)	12 (66.67)	13 (72.22)
Teacher prep	8 (42.11)	13 (72.22)	11 (57.89)	8 (44.44)	8 (44.44)	12 (66.67)	9 (50.00)	10 (58.82)	6 (33.33)	7 (38.89)	6 (33.33)	10 (55.56)
Prof dev	7 (36.84)	4 (22.22)	4 (21.05)	6 (33.33)	4 (22.22)	3 (16.67)	6 (33.33)	3 (17.65)	7 (38.89)	4 (22.22)	7 (38.89)	3 (16.67)
Mentorship	3 (15.79)	1 (5.56)	2 (10.53)	1 (5.56)	5 (27.78)	2 (11.11)	2 (11.11)	4 (13.53)	4 (22.22)	5 (27.78)	3 (16.67)	4 (22.22)

Similar percentages of traditionally prepared teachers and ARL teachers reported using the HLPs in all but two categories. The exceptions were Instruction 1 (prioritize learning goals) and Instruction 4 (Teach cognitive and metacognitive strategies to support learning and independence), which traditionally prepared teachers more frequently reported using than ARL teachers. All teachers identified using SEL/Behavioral 4 (conduct functional behavioral assessments to develop individual student behavior support plans) the least often. Similarly, both groups reported not generally using Assessment 2 (interpret and communicate assessment information with stakeholders to collaboratively design and implement educational programs) at least once per week. The category both groups most frequently reported using was Instruction 12 (provide positive and constructive feedback to guide students' learning and behavior; see Table 15).

Table 15

Early-Career Special Education Teachers' Self-Report on the Frequency of Use of High-Leverage Practices by Teacher Preparation

High-leverage practices	Teacher preparation	
	Traditional ($N = 27$) *n* (%)	ARL ($N = 22$) *n* (%)
Collaboration 1: Professionals	21 (80.77%)	18 (85.72%)
Collaboration 2: Meetings	15 (57.69)	13 (61.90)
Collaboration 3: Parents	16 (61.54)	12 (57.15)
Assessment 1: Sources of information	22 (84.62)	16 (94.11)
Assessment 2: Communicate results	8 (30.77)	5 (29.41)
Assessment 3: Use data meaningfully	16 (61.54)	12 (70.56)
Social-Emotional/Behavioral 1: Establish learning environment	23 (88.47)	17 (100.00)
Social-Emotional/Behavioral 2: Provide feedback	24 (92.31)	17 (100.00)

Social-Emotional/Behavioral 3: Teach social behaviors	24 (92.31)	17 (94.12)
Social-Emotional/Behavioral 4: Conduct functional behavioral assessments (FBAs)	6 (24.00)	6 (17.65)
Instruction 1: Prioritize learning goals	11 (44.00)	3 (35.29)
Instruction 2: Design instruction	20 (80.00)	6 (64.71)
Instruction 3: Adapt curriculum and materials	22 (88.00)	11 (87.5)
Instruction 4: Teach strategies	21 (84.00)	8 (57.14)
Instruction 5: Provide scaffolded supports	23 (92.00)	17 (100.00)
Instruction 6: Use explicit instruction	23 (92.00)	17 (100.00)
Instruction 7: Use flexible grouping	20 (83.33)	10 (71.42)
Instruction 8: Use strategies for engagement	23 (95.00)	12 (85.71)
Instruction 9: Use assistive technology	18 (75.00)	12 (85.71)
Instruction 10: Provide intensive instruction	16 (72.73)	11 (78.57)
Instruction 11: Maintain learning	17 (77.27)	10 (71.43)
Instruction 12: Provide feedback	22 (100.00)	17 (100.00)

Some similarities and differences appeared between elementary and secondary early-career teachers. Both groups reported using Instruction 11 (teach students to maintain and generalize new learning across time and settings) and Instruction 12 (provide positive and constructive feedback to guide students' learning and behavior) the most frequently. Assessment 2 (interpret and communicate assessment information with stakeholders to collaboratively design and implement educational programs) and SEL/Behavior 4 (conduct functional behavioral assessments to develop individual student behavior support plans) were the HLPs teachers reported using less than once per week. The HLPs with the most significant discrepancies in reported use were Instruction 1 (identify and prioritize long- and short-term learning goals): elementary 31.82%, secondary 73.69%); Instruction 4 (teach cognitive and metacognitive strategies to support

learning and independence: elementary 65%, secondary 100%); and Instruction 6 (use explicit instruction): elementary 95%, secondary 77.77% (see Table 15).

Table 16

Early-Career Special Education Teachers' Self-Report on the Frequency of Use of High-Leverage Practices by Grade Level

High-leverage practices	Elementary $N = 29$ *n* (%)	Secondary $N = 22$ *n* (%)
Collaboration1: Professionals	20 (80.00)	18 (81.82)
Collaboration 2: Meetings	13 (54.16)	15 (68.16)
Collaboration 3: Parents	16 (66.66)	12 (54.54)
Assessment 1: Sources of information	21 (91.31)	16 (84.21)
Assessment 2: Communicate results	9 (39.13)	4 (21.04)
Assessment 3: Use data meaningfully	13 (56.52)	15 (78.95)
Social-Emotional/Behavioral 1: Establish learning environment	20 (86.95)	22 (100.00)
Social-Emotional/Behavioral 2: Provide feedback	21 (91.30)	22 (100.00)
Social-Emotional/Behavioral 3: Teach social behaviors	20 (86.96)	22 (100.00)
Social-Emotional/Behavioral 4: Conduct FBAs	7 (31.82)	2 (10.52)
Instruction 1: Prioritize learning goals	7 (31.82)	10 (73.69)
Instruction 2: Design instruction	17 (77.27)	14 (89.48)
Instruction 3: Adapt curriculum and materials	19 (90.48)	17 (83.34)
Instruction 4: Teach strategies	13 (65.00)	22 (100.00)
Instruction 5: Provide scaffolded supports	18 (90.00)	18 (94.42)
Instruction 6: Use explicit instruction	19 (95.00)	16 (77.77)
Instruction 7: Use flexible grouping	16 (80.00)	14 (88.86)
Instruction 8: Use strategies for engagement	19 (95.00)	16 (88.89)
Instruction 9: Use assistive technology	14 (70.00)	16 (61.11)
Instruction 10: Provide intensive instruction	16 (88.88)	11 (66.67)
Instruction 11: Maintain learning	20 (100.00)	20 (100.00)
Instruction 12: Provide feedback	20 (100.00)	20 (100.00)

Focus Groups

This study focused on how early-career special education teachers described their best teaching practices to determine if the practices were part of the four core HLPs (Collaboration, Assessment, Social-Emotional/Behavior, and Instruction). Teachers might have been implementing HLPs in their classrooms because these practices worked but were unaware of the HLP label. Members of two small focus groups responded to open-ended questions to provide additional insight into the practices they used in their classrooms. Analyzing and organizing the focus group responses around the following questions: (1) What do teachers know about HLPs? (2) What practices do teachers use in their classrooms in each of the four HLP categories (Collaboration, Assessment, SEL/Behavior, and Instruction)? (3) Why do they use those practices?

The researcher conducted two focus groups with the early-career special education teachers who volunteered to participate after completing the HLP survey. The first focus group had four teacher participants. Three taught at the middle school level, and one at the high school level. Two taught in self-contained classrooms, and two were resource teachers. Two had been teaching for 3 years, and two were in their second year. All participants in Focus Group 1 had completed traditional teacher education programs.

The two teacher participants in the second focus group taught at the high school level in self-contained classrooms. There were two early-career educators in the first year of teaching. Both participants in the second focus group participated in ARL programs. The composition of the groups with regard to teacher preparation was not intentional but the result of who volunteered for which time slot.

Table 17

Focus Group Participants

Name	Preparation	Grade level taught	Years of experience	Position
Focus group 1				
Chad	Traditional	Secondary	3	SIP
Rex	Traditional	Secondary	3	Strategies
Beth	Traditional	Secondary	2	Resource
Sandy	Traditional	Secondary	2	Resource
Focus group 2				
Mandy	ARL	Secondary	1	CLS
Laurie	ARL	Secondary	1	CLS

Data from Focus Groups

The focus group questions were structured and started broadly, addressing what the teachers knew about the HLPs, before becoming more specific. The questions were a means to determine if the teachers used the HLPs in the classrooms but were unaware of the HLP label. The researcher started the focus groups by letting the participants know that this was an opportunity for the researcher to further her knowledge about HLPs and the practices that teachers use. The teachers started by introducing themselves and where they worked to create a familiarity and understanding amongst the participants. As each question was posed (see page 53) by the researcher the teachers would share one at a time to give their insight and information. Sometimes a comment would inspire another participant to add something more or further clarify their own answer. Every participant answered every question. The participants in both focus groups were open and encouraging to each other and the researcher. After six general questions about their teaching practices were answered, the early-career teachers discussed their most effective strategy or practice in each HLP category (Collaboration, Assessment, SEL/Behavior,

and Instruction) and where they learned this practice. According to Dederding and Waters (2021) structured categories, such as the ones in this study, became the index codes for analyzing the results.

The researcher used in vivo coding which used the participants own words to assist in analyzing and summarizing the transcript data. In vivo coding uses the participants own language system for qualitative data analysis (Saldana & Omasta 2018). The first step in analyzing data was to sort the responses into index codes by the questions as presented to the participants. This initial sort was done being mindful that every participant had at least one response to each question.

After the initial sort into index codes was complete, the responses were reread to identify common responses that emerged. As described by Saldana & Omasta (2018) the researcher reviewed the responses in each index to find words and phrases that stood out and to identify patterns that emerged from the interview transcripts. Once indexing was completed, a deep reading identified thematic memos to be used to further code the data. Attention was given to similarities of response and the number of times a response was mentioned. Attention was given to determining how individual responses grouped into themes representative of the participants responses. Four key themes were identified, across the ten questions. These included: (1) unfamiliarity with HLPs; (2) Relationship building/ behavior management; (3) Struggling with communication; (4) Time management issues. The results of the in vivo coding can be found in Appendix D.

Teacher Knowledge of High-Leverage Practices

The early-career teachers reported learning more about EBPs than HLPs in their teacher preparation programs. When asked what they knew about HLPs, all six teachers

gave responses that showed they did not have much background or experience with the HLPs. Beth responded, “They derive from evidence-based practices, correct? That’s what I remember the most, is that high leverage practices come from evidence-based practices.” Many of the teachers talked about being unfamiliar with the vocabulary of HLPs. Sandy said,

> When I got your survey, I didn’t even know what you were talking about. But then, my co-teacher said, oh, you do this, that, and the other. And I was like, “Oh, if that’s what we’re talking about, I totally do all those things.” So, it was a verbiage thing for me at first.

Chad stated, “The first time I heard about HLPs was when I took your survey. I didn’t know what the definition of it was in the first place. When I was taking the survey, I didn’t know that the things that you listed were high-leverage practices.” Rex shared a similar experience:

> I actually was never really introduced to what high-level practices were until you sent us the survey. Once I looked at the survey that you sent, I was like, “What the heck is that?” So, I looked it up. And I have to say, I was introduced to a lot of the aspects of it, but more as evidence-based practices.

Although the early-career teachers remembered hearing HLPs mentioned in their teacher preparation classes, they had not received explicit teaching and practice as such in their classroom experiences.

Best Practices

Asked for the most effective practices used in their classrooms, the early-career teachers gave examples such as using prompting and wait time, putting students in

positive leadership roles, and implementing district-purchased curricula, like the Unique Learning System. Three teachers (Beth, Chad, and Sandy) spoke primarily about relationship-building as the most effective strategy they use in the classroom. None of the teachers identified any Collaboration or SEL/Behavior HLPs when discussing the relationships, they built with students. Relationships could form through Collaboration HLP 2 (organize and facilitate effective meetings with professionals and families), SEL/Behavior HLP 1 (establish a consistent, organized, and respectful learning environment), and SEL/Behavior HLP 2 (provide positive and constructive feedback to guide students' learning and behavior). However, there was no specific mention of these HLPs. The only explicit mention of an HLP in this part of the discussion came from Sandy, who talked about giving students specific feedback to help them improve their learning. She reported learning this strategy from her lead teachers during student teaching and again through an all-school, district-sponsored professional development session at the beginning of the year. An unexpected and concerning finding was that when asked to talk about their most effective practices, the early-career educators spoke broadly without explicitly mentioning the 22 HLPs.

Collaboration

In the next section of the focus group discussion, the early-career educators responded to questions about their most effective practices in collaboration. All teachers reported engaging in many collaborative activities in their classrooms with their colleagues and students and specifically mentioned working with other professionals to benefit students. Their responses varied by the type of classroom they teach in. Laurie said, "I like working with other people. I ask my paraprofessionals, 'You know this

student. What do you think?' We collaborate a lot, and there's no end to who you collaborate with." Linda noted, "I co-teach in front of the kids. We play back and forth, talk to each other, teach a lesson together." Beth expressed frustration with some of her collaborations with other teachers:

> You try to have that respectful relationship with them, and you try to collaborate. Sometimes, just no matter how many emails you send, and how many times you go look for them. And even when you go look for them, you don't always have time to physically track every teacher down. Especially when you're at the big schools. Especially high schools, and you're having to walk clear across campus to get input for an IEP because they don't respond to an email.

The teachers said it took more than one person to collaborate, and sometimes working with families or other professionals could be a struggle. However, collaboration was essential to help the students. The comments and examples showed that early-career teachers work in survival mode. They manage the idea of collaborating without exploring how collaborating with colleagues and families could benefit the students. It would be interesting to understand if more-seasoned teachers give deeper answers and examples of how they collaborate with professionals and families to increase student success, support student learning, and secure needed services.

Assessment

When asked what practices they use most often in the area of assessment, the early-career teachers talked about specific district-purchased programs. Chad said, "I do usually monthly progress monitoring on the computer using AIMSweb for academic goals." Sandy followed up, saying, "We also do the AIMSweb testing for math support."

Mandy reported using the assessments that come with the Unique Learning System. She said the curriculum, which comes with a pretest and a posttest, is differentiated with scaffolds and picture supports (Instruction HLP 15). However, there was no discussion about how teachers used these assessments to improve student outcomes. Beth noted that it could be more difficult to properly assess students who are supported through co-teaching services.

> Like in the push-in areas, they mostly just do the assessments that the gen ed teachers come up with. Obviously, some students have accommodations where they don't do all the questions, or they have modified. But for the most part, they just do those, and we measure it based on that.

The early-career teachers again seemed to show they were assessing students without addressing the intent behind why assessment is a powerful HLP. The Assessment HLPs suggest that teachers use multiple sources of information to understand a student's strengths and weaknesses, communicate this information to colleagues and families, and make adjustments based on the assessment practices that improve student outcomes. The focus group responses indicate that early-career teachers are going through the motions of assessment without seeking to improve student learning and outcomes. Early-career teachers cede much of their power to district-purchased programs or other instructors, not seeing how they can use these data to better understand student needs and improve student learning and outcomes.

Social-Emotional Learning/Behavior

Chad, the early-career teacher who worked in a self-contained classroom for students with behavioral challenges, shared, "FBAs are considered high-leverage

practice, which is like 90% of my class. I learned this in my behavior class at [University of Nevada, Reno].” This finding was particularly interesting because SEL/Behavior 4 (conduct functional behavioral assessments to develop individual student behavior support plans) was one of the HLPs that early-career teachers reported using less frequently. Logically, early-career teachers in positions where they work with students with behavioral challenges would develop FBAs and be more purposeful in student behavior support. After this specific mention of an HLP, the teachers were much more imprecise about their use of HLPs. There was a lot of conversation about building relationships. However, the early-career teachers did not specifically talk about creating a consistent, organized, and respectful learning environment (SEL/Behavior HLP 1), giving positive, constructive feedback (SEL/Behavior HLP 2), or explicitly teaching social behaviors (SEL/Behavior HLP 3). Sandy discussed building relationships with her students:

> I work to build relationships. It helps when you can take the time to focus on those SEL matters or behavior issues. You can use those relationships and behavior support if the students are getting in trouble in other classes, too.

Many participants provided general comments without getting to the intent and power behind the HLPs. Beth said, “I organize the student schedules so that I can see them during enrichment or STSS so I can check in with them and build those relationships.” However, building schedules is not an HLP category. There was much discussion from Rex and Sandy about getting to know their students to support them effectively. Although getting to know students might incorporate elements of the

SEL/Behavior HLPs, early-career teachers could not identify specific HLP elements and talk about them in the focus group discussions.

Instruction

When asked about their best practices in the HLP category of Instruction, the participants discussed many practices that did not match any of the 22 Instruction HLPs. Chad said, "Behavior management is definitely, I think, the biggest thing I do." Rex responded, "Knowing about ABC data and seeing behavior and all that stuff." Sandy added,

> There's a reason why students behave a certain way, and it's just them trying to tell you something. When a student tells you, f--- you, it doesn't mean f--- you. It's just like, "Oh, something's bugging you." Trying to figure out what caused them to get that way, and how we can help them to calm down and find a different way to tackle this together instead of just me saying, "Do this thing."

It was interesting to learn how often schools relied on special education teachers to provide behavioral interventions. Perhaps this reliance prevents the teachers from fully engaging in the instructional techniques that could move students forward in their learning.

Some early-career teachers provided examples of Instruction HLPs they are using. Beth, Mandy, and Laurie discussed adapting the curriculum and materials for students (Instruction HLP 5). Mandy said, "Using picture-supported reading. I think that differentiates work for kids." Laurie mentioned implementing assistive technology (Instruction HLP 9), saying, "I have kids with visual impairments, kids with hearing impairments. So, we are using assistive technology all over the place, classroom laptops.

I let kids use their phones because we're in high school." Rex and Laurie also talked about making the learning meaningful for their students, which could be components of Instruction HLP 1 (identify and prioritize long- and short-term learning goals), Instruction HLP 2 (systematically design instruction toward specific learning goal), and Instruction HLP 3 (adapt curriculum tasks and materials for specific learning goals). Laurie said, "We do job training, tons of job training. Our group operates the student store." The teachers who worked with the students more impacted by their disabilities discussed the importance of making student learning meaningful for student goals and outcomes. Mandy said, "Everything I do in here, I try to have some sort of purpose. 'How would this translate outside of this classroom? How does this meet the goals of my students?'"

Overall, the early-career teachers could not identify the specific HLPs and tie them into their work in their classrooms with their students. This finding suggests an opportunity for more focused professional development and practice with early-career special education teachers.

Qualitative Summary

The early-career special education teachers' responses showed a greater focus on process and organization, not what they do or how they teach their students. This was different than participant responses on the HLP survey where approximately 50% reported knowing the HLPs. The focus group participants reported having a better understanding of EBPs, which they identified as the source of HLPs; however, none of the responses addressed an identified EBP. When asked for their best teaching practices in each HLP category, the early-career educators were excited to share the practices they

were using in their classrooms, which were only occasionally HLPs. At times, the early-career teachers made connections between the HLPs they use in the classroom and the individual needs of their students. For example, teachers in SIP programs conduct more FBAs. Early-career teachers might just be trying to survive these first years in their own classrooms. To continue increasing teacher awareness and use of the HLPs, early-career teachers might need more explicit instruction, opportunities to practice the HLPs, and ongoing in-service opportunities to tie classroom teaching to the HLPs. This ongoing learning could help reinforce that HLPs are fundamental to student learning.

Summary

Chapter 4 presented quantitative findings in response to three questions, as follows.

1. **Do early-career special education teachers know about the HLPs?** There were no statistical differences in teacher knowledge of the HLPs in any of the four categories (Collaboration, Assessment, SEL/Behavior, Instruction) between traditionally prepared and ARL teachers or elementary and secondary teachers. Descriptive data showed that some teacher subgroups are more knowledgeable than others. Approximately half of all teachers reported knowing a particular practice is an HLP.
2. **Where did they learn the HLPs?** Two statistically significant findings emerged from examining where early-career teachers learned the HLPs. Traditionally prepared teachers learned the SEL/Behavior HLPs more often through their teacher preparation programs than ARL teachers, who learned them through other avenues. There was also a significant difference in where

elementary and secondary teachers learned the Collaboration HLPs, with elementary early-career teachers learning them through their teacher preparation program more often. It was also notable that even though teachers might not have identified a practice as an HLP, they could report where they learned that practice.

3. **How frequently do they use the HLPs?** There were not enough data to run a Chi-square goodness of fit test on the frequency of use data; however, the data provided information on the HLPs early-career teachers used the most and least frequently. The traditionally prepared and ARL teachers reported using the HLPs at similar percentages except for Instruction HLPs 1 and 4, which the traditionally prepared teachers reported using more often. Elementary and secondary teachers reported using the Assessment 2 and Behavior 4 HLPs the least. The most significant discrepancy was in Instruction HLP 1, with 73.69% of secondary teachers reporting setting goals with their students at least weekly compared to 31.82% of elementary school early-career teachers.

The qualitative data provided extensive insight into early-career teachers' practices in their classrooms. More than 50% of early-career special education teachers could identify that practices were HLPs on the survey; however, the early-career educators who participated in the focus groups were often unfamiliar with the HLP label. When asked about the HLPs they used in their classrooms, many early-career teachers' examples often indicated naïveté and showed they were operating in a survival/management/organizational mode. Many of the practices discussed by the early-

career teachers were not specific HLP targets. These insights suggest ideas for future research.

Chapter 5 will include an expansion and discussion of the findings with further interpretations and explanations. There will be discussions of the study's limitations and recommendations for future research and practice related to HLPs in special education.

Chapter 5: Discussion

Historical trends paired with the current state of the special education profession suggest that improving outcomes for students with disabilities requires improving the teachers' instructional practices (Darling-Hammond, 2009; Johnson & Semmelroth, 2014; McLeskey & Brownell, 2015). McLeskey and Brownell (2015) found that teachers' impact on student achievement was greater than other school influences, especially for students with disabilities. Students identified as having disabilities require teachers who enter the classroom prepared to educate them. However, classroom practice indicates extensive use of subjective judgments based on trial and error instead of research-based instruction and interventions (Brock et al., 2020). Learners with disabilities require effective instruction to reach their potential, making it even more critical for teachers to provide highly effective, research-based instruction responsive to student needs. One way to address this need is through HLPs.

The purpose of this exploratory descriptive study was to examine which of the 22 special education HLPs early-career special education teachers reported knowing and using in their classrooms. The study entailed comparing HLP knowledge and use between traditionally prepared and ARL early-career special educators, who have different preparation and routes to the classroom. Because the classroom environment and student needs can vary based on the student's educational stage, teachers' self-reported results underwent examination to compare elementary and secondary early-career special educators. It was necessary to consider various elements of HLP adoption among early-career teachers in a large urban school district and whether HLPs could be a tool for closing the research-to-practice gap.

Research Questions and Results Summary

Four research questions guided this study to add to the new but developing body of research on the importance of using HLPs in education. Similar percentages of traditionally prepared and ARL early-career teachers reported knowing that HLPs were categorized as HLPs. Because of the lack of highly qualified teachers impacting special education, this alignment was a positive finding (Johnson & Semmelroth, 2014). To fill teacher shortages, schools encourage many special education teachers to complete ARL programs. However, ARL teachers might lack adequate preparation to meet the demands of the teaching field (Boe et al., 2008). This study's results did not show differences in HLP knowledge between traditionally prepared and ARL teachers. Therefore, regardless of their teacher preparation, the early-career special education teachers reported knowledge about the HLPs.

Data analysis suggested that traditionally prepared teachers acquire HLP information through teacher training programs, whereas ARL teachers learn HLPs through multiple avenues. This finding is also encouraging, showing that early-career educators are learning the HLPs, despite the source (i.e., teacher preparation, ongoing professional development, or mentoring). According to this study, teacher education programs and professional development provide at least some instruction in HLPs. Just 6 years after HLPs' introduction, approximately 50% of the early career teachers surveyed reported awareness of these practices. There are continuing opportunities to build on these results for further development.

Data analysis showed no statistical differences in reported knowledge of HLPs between elementary and secondary early-career special education teachers. Further, there

was no difference between where elementary and secondary teachers reported learning the HLPs: teacher education classes and professional development. The result is unsurprising. Although elementary and secondary general educators have different licenses and duties, all licensed special education teachers take the same classes and receive the same preparation, regardless of teaching level. However, the data were unclear regarding how elementary teachers use HLPs compared to secondary teachers. The lack of knowledge is an opportunity for further research and clarification on implementing HLPs at the elementary and secondary levels.

Despite some exceptions, such as SEL/Behavior HLP 4 (Conduct functional behavioral assessments to develop individual student behavior support plans), most early-career teachers reported using HLPs in their classrooms. Overall, early-career teachers' self-reports of HLP implementation showed that many practices had at least weekly usage. Although daily use of all HLPs would be inappropriate, most practices should have classroom implementation at least weekly.

The focus group data raised concerns about the reliability of the survey responses. For example, when asked about their best practices for assessment, many focus group participants cited district-purchased curriculum and none of the three Assessment HLPs. Although early-career teachers might think they are engaging in HLPs by using a district-approved product, the conversations revealed a lack of understanding of the purpose or intent of HLPs. If teachers administer district-purchased assessments without using the results to analyze instructional practices and improve student outcomes, they miss the intent of the HLPs.

In the focus groups, many early-career teachers reported being unfamiliar with HLP vocabulary. The participants were likelier to discuss learning about EBPs in their preservice teaching programs. More frequent EBP use was a logical finding due to EBPs' development and refinement over the past 30 years. One of the teachers mentioned learning that HLPs developed from EBPs. The focus group results indicate an opportunity for ongoing refinement of how preservice teacher educators teach and practice the 22 HLPs, leading to improved student learning outcomes.

One reason for conducting the focus groups was that vocabulary in education could be a barrier. Early-career teachers might use HLPs in their classrooms without understanding the practices' labels as HLPs. In response to a request about the early-career teachers' best, most effective practices around the four categories of HLPs (Collaboration, Assessment, SEL/Behavior, and Instruction), the responses showed that early-career teachers operate in survival/management mode. There were few comments specific to the core of the practices in which they engaged with their students. Instead, many participants discussed their attempts to collect data for IEP reports or to build relationships with students. The early-career teachers rarely identified specific, research-based practices that would help improve student learning or outcomes. Thus, there is a need for ongoing professional development and mentorship for early-career teachers to cement the HLPs in teacher practice.

Connections to Previous Research

HLPs could serve as a foundation for a common vision, expectations, and responsibilities of special education teachers. The practices could provide a framework for preservice teacher preparation programs and ongoing professional development in

schools. Because the four-part HLP framework (Collaboration, Assessment, SEL/Behavior, and Instruction) is relatively new, full implementation and measurable impact could be much slower than the rate McLeskey and Brownell (2015) predicted.

Despite the identification of effective practices to address the academic and behavioral needs of students with disabilities, extensive classroom use is not common practice (Cook & Cook, 2013; McLeskey et al., 2019). Scholars have given much attention to the research-to-practice gap yet insufficiently focused on how teacher preparation programs and ongoing professional development impact the practices. The lack of scholarship indicates a gap in practice, as the teachers are responsible for implementing quality practices shown to be effective.

The need for high-quality teachers is a serious concern. Research shows that students assigned to the most effective teachers 3 years in a row score as many as 50 percentile points higher on achievement measures than students assigned to less-effective teachers (Sanders & Horn, 1998). HLPs offer an opportunity to create more effective teachers with increased skills and capacity, allowing all students to improve significantly.

Researchers across disciplines, including mathematics, reading, and science, have identified specific, effective practices for systematic inclusion in preservice teaching programs (McLeskey et al., 2019). Preservice teachers spend significant time with their lead teachers during practicum and student teaching and tend to replicate the practices they observe. To avoid perpetuating teaching practices that do not improve student outcomes, lead teachers should have training and opportunities to practice the 22 HLPs with their mentors (Gelfuso et al., 2015).

The move to teacher preparation programs that connect coursework and field experiences is progressing. Council for Accreditation of Educator Preparation and Council for Exceptional Children accreditation standards require the placement of high-quality field experiences at the center of teacher preparation programs. This mandate aligns with the HLP focus, indicating the need for early-career teachers to learn HLPs through coursework and practice them in practicums, student teaching, and other clinical experiences with good models and opportunities for feedback. The shift to systematically preparing preservice teachers to use HLPs in classrooms (McLeskey & Brownell, 2015) benefits from the simultaneous move toward requiring more clinical experiences for preservice teachers. By implementing HLPs, special education teachers are likely to have the capacity to utilize EBPs to further support student learning—for example, using flexible grouping (an HLP) to provide specific vocabulary instruction (an EBP). McCray et al. (2017) supported McLeskey and Brownell's (2015) finding that HLPs provide a structure supportive of effective teaching at all levels, whereas EBPs allow teachers to focus more on specific skills. Farley (2020) also notes that the shift to HLPs could be encouraged through teacher evaluation systems. Many school districts use Danielson Framework for Teaching (FFT) which is a research-based tool developed over 20 years ago by Charlotte Danielson. This tool is currently the most widely used tool to define effective teaching in the United States (Farley 2020). Although many of the HLPs are also included in the FFT framework not all of them are included, for example the 12 Instruction HLPs are not explicitly defined in the FFT beyond "using questioning and discussion techniques" and "engaging students in learning." Perhaps special education teachers and the students they serve could be better assisted through an evaluation that

explicitly lays out the practices that will most effectively support students with disabilities.

Special education programs offer individualized instruction to meet the needs of a heterogeneous group of students with disabilities (Johnson & Semmelroth, 2014). The work is challenging and requires highly skilled teachers; however, a teaching profession overwhelmed by teacher attrition and turnover does not serve students with disabilities well (Hester et al., 2020). Upon entry into the field, early-career teachers need ongoing guidance to apply what they learned in their preservice teaching programs (Billingsley et al., 2019). Ongoing mentoring and support are vital for special education teachers, who leave the profession at higher rates (Hester et al., 2020). Focusing on supporting special education teachers with HLP training through mentorship, professional development, and ongoing administrative support will improve teachers' instructional skills. By embracing HLPs, teacher preparation programs could help alleviate the problem of teacher attrition, systematically training preservice and early-career teachers to be better prepared to meet the needs of all learners (McLeskey et al., 2019). Preparing preservice and early-career teachers to deliver practices effective in increasing student outcomes will aid in retention, as better-prepared teachers are more likely to remain in the classroom (Hester et al., 2020).

Special educators face a broad range of expectations. Special education teachers might have as little as 20% of their time to devote to instruction amid other duties, such as case management, testing, progress monitoring, paperwork, meetings, and support staff management (Johnson & Semmelroth, 2014; Vannest et al., 2009). The special education teacher's job is often unsustainable, limiting the academic progress that even

the most talented teachers can make with their students. Job expectations that encompass multiple diverse tasks could result in teaching positions in which success is nearly impossible. Too many responsibilities emerged as a common topic in the focus group conversations. Instead of talking about building collaborations to help increase student success, early-career educators discussed frustrations with obtaining general education teachers' input for the IEP reports. Although the early-career teachers reported having many responsibilities, the heart of their mission—to improve student learning and success—often vanished in their efforts to manage all of the special education teacher's responsibilities.

The ambiguity and often contradictory nature of the special education teacher role might also lead to teacher burnout and frustration (Billingsley et al., 2019). The roles of special education teachers can vary widely depending on the service delivery model (e.g., co-teaching, resource, self-contained, etc.) and the students they serve. One of the greatest challenges early-career teachers face is making sense of their roles in the school. By structuring special education teachers' roles and expectations around the 22 HLPs, preservice teaching programs, schools, and school districts could present more coherent expectations for effective special education instruction (Billingsley et al., 2019; Hester et al., 2020).

Limitations of the Research

Given the exploratory nature of this study, there are a few limitations. The results are restricted to the early-career educators who completed the survey and volunteered to participate in the focus groups. In addition, survey administration occurred in only one large urban school district, not nationwide. Data collection took place toward the end of

the school year when teachers could be less inclined to participate. Although the small sample size was sufficient for descriptive results, the limited data did not permit a more robust analysis. For example, when examining frequency of use, the number of categories made any analysis inappropriate. It is also possible that the survey responses contained inaccuracies that could have impacted the interpretation. The survey was a directed and, in many cases, forced-choice instrument. It is not uncommon for survey participants to want to please the researcher and provide favorable responses. More nuanced scaling with more options for less-knowledgeable teachers could have enhanced the study's reliability. Determining a response rate was impossible due to the district's definition of new hires as early-career teachers, thus inflating the population of early-career survey recipients. Finally, the findings are not generalizable beyond the scope of this study.

Recommendations for Practice

This study's findings could benefit teacher educators and school personnel. Improving teacher preparation and classroom implementation of HLPs could be a powerful tool in closing the research-to-practice gap. Teachers who are skillful in HLPs could remain focused on improving student outcomes, not administrative activities. Instead of producing data for an IEP, teachers could purposefully use assessments and collaborations to support student learning. Educators not yet familiar with HLPs should receive ongoing professional development opportunities.

This study showed that early-career teachers have some familiarity with the HLPs, but there is room for improvement. Teacher educators could build curricula with a simple framework designed around the 22 HLPs. By learning and teaching the four categories of HLPs (Collaboration, Assessment, SEL/Behavior, and Instruction), teacher

educators could create a preparation program that clearly articulates what preservice teachers will practice in their field experiences and professions. This clear vision and messaging would allow opportunities for feedback and progression as the preservice teachers move through their preparation programs. Explicitly teaching the HLPs also helps prepare preservice teachers and gives teacher educators specific opportunities to measure that readiness.

Recommendations for Future Research

Future research and ongoing opportunities for investigation include verifying self-reported data through observations. Observational checklists or matrices around the 22 HLPs could offer insight into how frequently early-career teachers are implementing the HLPs. The population of this study was early-career teachers; therefore, future researchers might examine what seasoned special education teachers know about HLPs and how often they implement these practices in their work. Because this study's participants worked in a single large urban school district, future researchers could include multiple school districts to elicit greater insights into the knowledge and use of HLPs and provide more generalizable results. With a broader knowledge of how teachers understand and use HLPs, special education teacher educators and program directors might continue to refine how teachers use these fundamental practices to support student learning and close the research-to-practice gap.

Conclusion

To fulfill the mission of helping students with disabilities learn and meet their potential, district administrators should create systems where special education teachers can focus on the practices that matter most. Three decades of researchers have produced

an extensive body of knowledge on the use and application of EBPs effective for improving the educational outcomes of students with disabilities. No other content area in education has produced more instructional practice research than special education, yet the profession has made little progress in putting these instructional strategies into practice (Johnson & Semmelroth, 2014).

Advancing the HLPs from a good idea to universal use requires several focused stages. Teacher educators should continue to improve their teaching of the 22 HLPs, clearly articulating to preservice teachers why the practices are fundamental to educating students with disabilities. Preservice teachers need time and repetition in clinical settings to implement the HLPs and receive feedback on their practice to improve. In the hiring process, school district leaders should ask teachers what they know about the HLPs to show they value these practices in classrooms. Mentors should coach and support early-career teachers to implement the HLPs in their classrooms, integrating the practices at their grade levels with their curriculum and content. Professional development program designers should honor the experiences of more-seasoned teachers while focusing on instruction and HLPs. HLPs have the potential to make instruction, teaching, and learning a priority for early-career teachers. Positive outcomes for students with disabilities depend on continuous efforts to develop the most prepared and instruction-focused teachers (McLeskey et al., 2019). Teacher education programs are poised to do just that.

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Appendix A: Request for Participation/Recruitment

Request for Research Application

PART I: APPLICANT INFORMATION (required)

Name	Rebecca Smith-Engh
Address	Reno, NV 89523
Telephone Number	775-772-2220
Present Position	Special Education Teacher
Name of Employer	Washoe County School District
Employer Telephone Number	775-746-5870
Previous Position	Full-time student
Name of Previous Employer	None
Telephone Number	N/A

If full-time or part-time student, name and address of institution you are attending
University of Nevada Reno

Academic degree(s) you currently hold
B.S., University of Nevada
M.A., University of Nevada

Degree-granting institution(s) University of Nevada, Reno

If this research project is not part of an academic program of study, please describe why you wish to conduct this research and the intended audience for your research results.

PART II: GENERAL DESCRIPTION OF STUDY (required)

Title of proposed Research Project: The Impact of Teaching High-Leverage Practices to Preservice Teachers
Why do you wish to conduct this research? To better understand the experiences of new special education teachers

How is the project being funded? No funding is required. The study looks at the lived experiences of new special education teachers who will be asked to volunteer their time to share these experiences.

Who is your advisor or committee chairman? (if applicable)
Name: Dr. Tammy V. Abernathy

Institution: University of Nevada, Reno

Department Special Education

Address: College of Education, 1664 N. Virginia St., Reno, NV 89557

Telephone Number: 775-682-7862

Has the proposed research been approved by your advisor and/or thesis committee?
Check one: _X_ Yes ___ No

If yes, please attach supporting documentation of approval. If no, please attach further information and documentation of why this approval is not required.

What are the purposes of the study? The purpose of this study is to look at how the preservice experience of new teachers impacts their experiences as a new teacher.
What is your hypothesis or research question? Teachers who were explicitly taught and able to practice the HLPs during their preservice teacher education program are more effective and confident in their first years in the classroom.

Of what value is this study to universities, or to education in general? The study would provide insight regarding the experiences that teachers are having in their teacher education programs and how this is translating into their feelings of effectiveness as a new teacher.

What time schedule is foreseen for conducting the research? (Please submit the detailed Timeline, Part VI, as well as filling out the basic information below) From 04/15/2022 to 08/01/2022

Research Approval

DATE: May 3, 2022

Name of Proposed Study: "High Leverage Practices and Early Career Teachers"

Affiliation: University of Nevada, Reno; Washoe County School District

Principal Investigators: Dr. Tammy Abernathy, Rebecca Engh

Approval to conduct this study within the Washoe County School District expires: June 15, 2022

Please be advised that the WCSD Office of Accountability, Department of Research and Evaluation, has approved this research request.

1. Approval or exemption for this study should also be obtained from the UNR *Institutional Review Board.*

2. Per Washoe County School District Board Administrative Regulation 1141, ***no research material or research recruiting materials may be circulated, distributed, or posted on any District premises, or distributed through District email.*** This prohibition includes research information or recruitment material intended for students, parents, teachers, administrators, or other staff. Only material that is directly related to a specific classroom curriculum for a legitimate pedagogical purpose may be distributed on District property or through District resources (e.g., District email and phone systems).

3. Participation by any student, parent, teacher, administrator, or school is voluntary. School principals may decline to participate in external research projects for any reason.

4. Researchers are required to maintain strict privacy/confidentiality safeguards to assure the anonymity of participating students, parents, teachers, administrators, schools, and the District. ***Reports of this research must not identify the Washoe County School District, WCSD schools, administrators, teachers, or students, except by prior written permission of this office.***

5. The use of research data collected from the Washoe County School District for this study is restricted to the purpose specified in the research application. ***It is not permissible to use data collected for this study for the purpose of any other study, or for an extension of the current study, without prior written consent from this office.***

6. All research conducted within the Washoe County School District must conform to the federal ***Family Education Rights and Privacy Act (FERPA)***, and to all federal regulations regarding ***Protection of Human Subjects***.

7. Researchers are strongly encouraged to share with WCSD a copy of any findings, dissertation, articles, or reports that stem from this project. The Department of Research

and Evaluation may share results either internally with relevant departments/stakeholders or externally, with proper acknowledgement. Please let us know if the research results are restricted for any reason and the length of the restriction. We will not publicly release restricted findings. Please submit to: Dr. Norma Velasquez-Bryant, n.velaquezbryant@washoeschools.net

Email 1

Dear Educator,

My name is Becca Engh, and I am currently a resource teacher at Billinghurst. I am also pursuing a PhD at UNR. I am working on a study as a portion of the requirement for my PhD.

For my study, I am interested in learning more about high-leverage practices (HLPs). There are 22 HLPs intended to address the most critical practices that K–12 special education teachers perform. The selected practices may be used frequently in classrooms and have been shown to improve student outcomes if successfully implemented.

I am looking at the experiences of early-career special education teachers and learning these HLPs in their teacher education programs.

Will you kindly take about 5 minutes to fill out the attached survey about your experiences?

https://www.surveymonkey.com/r/P3X7KSQ

The survey is arranged around the four core areas of HLPs:

- Collaboration (3 HLPs)
- Assessment (3 HLPs)
- Social-Emotional Learning/Behavior (4 HLPs)
- Instruction (12 HLPs)

The last few questions offer the opportunity to participate in a small focus group to discuss your experiences more extensively. This focus group will happen over Zoom. I would love to chat with a small group of teachers more about their experiences.

I appreciate you sharing your knowledge to help me deepen my understanding.

Every teacher who responds to the survey will be entered into a drawing for a $10 Starbucks gift card. One card will be drawn for every 10 teachers who respond.

If you have any questions, please reach out.

Thank you for your help and your input. It is very valuable,

Becca Engh

Email 2

Hello Teachers,

I have so much gratitude to the educators who took the time to complete my survey on their experiences with high-leverage practices (HLPs).

If you have not had an opportunity to complete the survey, I wanted to reach out and ask you to spare a few minutes (about 5 to 7) to complete this survey and add your input and experiences to what is known about HLPs and early-career teachers.

https://www.surveymonkey.com/r/P3X7KSQ

If you have already filled out the survey, please disregard this email. It is anonymous, so I can't identify who filled it out previously.

Thank you again,

Becca

Appendix B: Survey

Early-Career Teachers and High Leverage Practices

1. What grade do you teach?

    - K–5
    - 6–12

2. What was your preparation for becoming a teacher?

    - Alternate route to licensure (ARL)
    - Traditionally prepared (4-year college or university resulting in teacher licensure)

3. How many years have you been a classroom teacher?

    - This is my first year
    - 2–3
    - 4–5 years
    - more than 5 years

4. What best describes your teacher position

    - Resource – generalist
    - Strategies
        - Working with students with autism/community living supports
        - Working with students on life skills
    - EBD – working with students with behavioral challenges
    - Other

Collaborate with professionals to increase student success.

5. Were you aware that this was classified as a high-leverage practice?

    - Yes
    - No

6. Where did you learn this practice?

    - Teacher preparation
    - Professional development (PD)
    - Mentorship
    - Have not yet learned

7. How often do you use this practice?

    - At least once a day
    - At least once a week
    - At least once a month
    - At least once a quarter
    - At least once a semester
    - At least once a year
    - Never

Organize and facilitate effective meetings with professionals and families.

8. Were you aware that this was classified as a high-leverage practice?

    - Yes
    - No

9. Where did you learn this practice?

    - Teacher preparation
    - Professional development (PD)
    - Mentorship
    - Have not yet learned

10. How often do you use this practice?

    - At least once a day
    - At least once a week
    - At least once a month
    - At least once a quarter
    - At least once a semester
    - At least once a year
    - Never

Collaborate with families to support student learning and secure needed services.

11. Were you aware that this was classified as a high-leverage practice?

    - Yes
    - No

12. Where did you learn this practice?

    - Teacher preparation

- Professional development (PD)
- Mentorship
- Have not yet learned

13. How often do you use this practice?

- At least once a day
- At least once a week
- At least once a month
- At least once a quarter
- At least once a semester
- At least once a year
- Never

Use multiple sources of information to develop a comprehensive understanding of a student's strengths and needs.

14. Were you aware that this was classified as a high-leverage practice?

- Yes
- No

15. Where did you learn this practice?

- Teacher preparation
- Professional development (PD)
- Mentorship
- Have not yet learned

16. How often do you use this practice?

- At least once a day
- At least once a week
- At least once a month
- At least once a quarter
- At least once a semester
- At least once a year
- Never

Interpret and communicate assessment information with stakeholders to collaboratively design and implement educational programs.

17. Were you aware that this was classified as a high-leverage practice?

- Yes

- No

18. Where did you learn this practice?

    - Teacher preparation
    - Professional development (PD)
    - Mentorship
    - Have not yet learned

19. How often do you use this practice?

    - At least once a day
    - At least once a week
    - At least once a month
    - At least once a quarter
    - At least once a semester
    - At least once a year
    - Never

Use student assessment data, analyze instructional practices, and make necessary adjustments that improve student outcomes.

20. Were you aware that this was classified as a high-leverage practice?

    - Yes
    - No

21. Where did you learn this practice?

    - Teacher preparation
    - Professional development (PD)
    - Mentorship
    - Have not yet learned

22. How often do you use this practice?

    - At least once a day
    - At least once a week
    - At least once a month
    - At least once a quarter
    - At least once a semester
    - At least once a year
    - Never

Establish a consistent, organized, and respectful learning environment.

23. Were you aware that this was classified as a high-leverage practice?

    - Yes
    - No

24. Where did you learn this practice?

    - Teacher preparation
    - Professional development (PD)
    - Mentorship
    - Have not yet learned

25. How often do you use this practice?

    - At least once a day
    - At least once a week
    - At least once a month
    - At least once a quarter
    - At least once a semester
    - At least once a year
    - Never

Provide positive and constructive feedback to guide students' learning and behavior.

26. Were you aware that this was classified as a high-leverage practice?

    - Yes
    - No

27. Where did you learn this practice?

    - Teacher preparation
    - Professional development (PD)
    - Mentorship
    - Have not yet learned

28. How often do you use this practice?

    - At least once a day
    - At least once a week
    - At least once a month
    - At least once a quarter

- At least once a semester
- At least once a year
- Never

Teach social behaviors.

29. Were you aware that this was classified as a high-leverage practice?

- Yes
- No

30. Where did you learn this practice?

- Teacher preparation
- Professional development (PD)
- Mentorship
- Have not yet learned

31. How often do you use this practice?

- At least once a day
- At least once a week
- At least once a month
- At least once a quarter
- At least once a semester
- At least once a year
- Never

Conduct functional behavioral assessments to develop individual student behavior support plans.

32. Were you aware that this was classified as a high-leverage practice?

- Yes
- No

33. Where did you learn this practice?

- Teacher preparation
- Professional development (PD)
- Mentorship
- Have not yet learned

34. How often do you use this practice?

- At least once a day
- At least once a week
- At least once a month
- At least once a quarter
- At least once a semester
- At least once a year
- Never

Identify and prioritize long- and short-term learning goals.

36. Were you aware that this was classified as a high-leverage practice?

- Yes
- No

36. Where did you learn this practice?

- Teacher preparation
- Professional development (PD)
- Mentorship
- Have not yet learned

37. How often do you use this practice?

- At least once a day
- At least once a week
- At least once a month
- At least once a quarter
- At least once a semester
- At least once a year
- Never

Systematically design instruction toward a specific learning goal.

38. Were you aware that this was classified as a high-leverage practice?

- Yes
- No

39. Where did you learn this practice?

- Teacher preparation
- Professional development (PD)

- Mentorship
- Have not yet learned

40. How often do you use this practice?

- At least once a day
- At least once a week
- At least once a month
- At least once a quarter
- At least once a semester
- At least once a year
- Never

Adapt curriculum tasks and materials for specific learning goals.

41. Were you aware that this was classified as a high-leverage practice?

- Yes
- No

42. Where did you learn this practice?

- Teacher preparation
- Professional development (PD)
- Mentorship
- Have not yet learned

43. How often do you use this practice?

- At least once a day
- At least once a week
- At least once a month
- At least once a quarter
- At least once a semester
- At least once a year
- Never

Teach cognitive and metacognitive strategies to support learning and independence.

44. Were you aware that this was classified as a high-leverage practice?

- Yes
- No

45. Where did you learn this practice?

    - Teacher preparation
    - Professional development (PD)
    - Mentorship
    - Have not yet learned

46. How often do you use this practice?

    - At least once a day
    - At least once a week
    - At least once a month
    - At least once a quarter
    - At least once a semester
    - At least once a year
    - Never

Provide scaffolded supports.

47. Were you aware that this was classified as a high-leverage practice?

    - Yes
    - No

48. Where did you learn this practice?

    - Teacher preparation
    - Professional development (PD)
    - Mentorship
    - Have not yet learned

49. How often do you use this practice?

    - At least once a day
    - At least once a week
    - At least once a month
    - At least once a quarter
    - At least once a semester
    - At least once a year
    - Never

Use explicit instruction

50. Were you aware that this was classified as a high-leverage practice?

- Yes
- No

51. Where did you learn this practice?

- Teacher preparation
- Professional development (PD)
- Mentorship
- Have not yet learned

52. How often do you use this practice?

- At least once a day
- At least once a week
- At least once a month
- At least once a quarter
- At least once a semester
- At least once a year
- Never

Use flexible grouping

53. Were you aware that this was classified as a high-leverage practice?

- Yes
- No

54. Where did you learn this practice?

- Teacher preparation
- Professional development (PD)
- Mentorship
- Have not yet learned

55. How often do you use this practice?

- At least once a day
- At least once a week
- At least once a month
- At least once a quarter
- At least once a semester

- At least once a year
- Never

Use strategies to promote active student engagement.

56. Were you aware that this was classified as a high-leverage practice?

- Yes
- No

57. Where did you learn this practice?

- Teacher preparation
- Professional development (PD)
- Mentorship
- Have not yet learned

58. How often do you use this practice?

- At least once a day
- At least once a week
- At least once a month
- At least once a quarter
- At least once a semester
- At least once a year
- Never

Use assistive and instructional technologies.

59. Were you aware that this was classified as a high-leverage practice?

- Yes
- No

60. Where did you learn this practice?

- Teacher preparation
- Professional development (PD)
- Mentorship
- Have not yet learned

61. How often do you use this practice?

- At least once a day
- At least once a week

- At least once a month
- At least once a quarter
- At least once a semester
- At least once a year
- Never

Provide intensive instruction.

62. Were you aware that this was classified as a high-leverage practice?

- Yes
- No

63. Where did you learn this practice?

- Teacher preparation
- Professional development (PD)
- Mentorship
- Have not yet learned

64. How often do you use this practice?

- At least once a day
- At least once a week
- At least once a month
- At least once a quarter
- At least once a semester
- At least once a year
- Never

Teach students to maintain and generalize new learning across time and settings.

65. Were you aware that this was classified as a high-leverage practice?

- Yes
- No

66. Where did you learn this practice?

- Teacher preparation
- Professional development (PD)
- Mentorship
- Have not yet learned

67. How often do you use this practice?

- At least once a day
- At least once a week
- At least once a month
- At least once a quarter
- At least once a semester
- At least once a year
- Never

Provide positive and constructive feedback to guide students' learning and behavior.

68. Were you aware that this was classified as a high-leverage practice?

- Yes
- No

69. Where did you learn this practice?

- Teacher preparation
- Professional development (PD)
- Mentorship
- Have not yet learned

70. How often do you use this practice?

- At least once a day
- At least once a week
- At least once a month
- At least once a quarter
- At least once a semester
- At least once a year
- Never

Focus Group

Would you be willing to participate in a small focus group on Zoom to talk about your experiences?

If so, please answer the following questions.

71. Name
72. Grade level
73. Email

Appendix C: Chi-Square Analysis

Collaboration Trad vs ARL

Results						
	Collaboration 1	Collaboration 2	Collaboration 3			***Row Totals***
Traditional	9 (10.22) [0.15]	14 (12.66) [0.14]	14 (14.12) [0.00]			37
ARL	12 (10.78) [0.14]	12 (13.34) [0.14]	15 (14.88) [0.00]			39
Column Totals	21	26	29			**76 (Grand Total)**

The chi-square statistic is 0.5647. The *p*-value is .754025. The result is *not* significant at $p < .05$.

Assessment Trad vs ARL

Results						
	Assessment 1	Assessment 2	Assessment 3			***Row Totals***
Traditional	15 (14.54) [0.01]	13 (13.46) [0.02]	14 (14.00) [0.00]			42
ARL	12 (12.46) [0.02]	12 (11.54) [0.02]	12 (12.00) [0.00]			36

Column Totals	27	25	26			**78 (Grand Total)**

The chi-square statistic is 0.066. The *p*-value is .967523. The result is *not* significant at $p < .05$.

SEL Traditional vs ARL

Results					
	SEL 1	SEL 2	SEL 3	SEL 4	***Row Totals***
Traditional	15 (14.89) [0.00]	16 (16.61) [0.02]	15 (13.75) [0.11]	13 (13.75) [0.04]	59
ARL	11 (11.11) [0.00]	13 (12.39) [0.03]	9 (10.25) [0.15]	11 (10.25) [0.05]	44
Column Totals	26	29	24	24	**103 (Grand Total)**

The chi-square statistic is 0.4168. The *p*-value is .936757. The result is *not* significant at $p < .05$.

Instruction Traditional vs ARL

Chi-square Value:	1.142
Degrees of Freedom:	10
P value:	0.99
Rows X Columns:	2 x 11

The result is not significant at p<.05

1b. Is there a difference between elementary and secondary teachers' knowledge of the HLPs? The answer is no – the groups knowledge is basically the same in each category of HLP.

Collaboration Elem vs Secondary

Results						
	Collaboration 1	Collaboration 2	Collaboration 3			***Row Totals***
Elementary	10 (10.00) [0.00]	11 (11.82) [0.06]	14 (13.18) [0.05]			35
Secondary	12 (12.00) [0.00]	15 (14.18) [0.05]	15 (15.82) [0.04]			42
Column Totals	22	26	29			**77 (Grand Total)**

The chi-square statistic is 0.1969. The *p*-value is .906219. The result is *not* significant at $p < .05$.

Assessment Elem vs Sec

Results						
	Assessment 1	Assessment 2	Assessment 3			***Row Totals***
Elementary	13 (13.34) [0.01]	12 (12.32) [0.01]	14 (13.34) [0.03]			39
Secon	13 (12.66) [0.01]	12 (11.68) [0.01]	12 (12.66) [0.03]			37
Column Totals	26	24	26			**76 (Grand Total)**

The chi-square statistic is 0.1013. The *p*-value is .950619. The result is *not* significant at $p < .05$.

SEL Elem vs Sec

Results						
	SEL 1	SEL 2	SEL 3	SEL 4		***Row Totals***
Elementary	12 (12.13) [0.00]	15 (13.58) [0.15]	11 (11.64) [0.04]	11 (11.64) [0.04]		49
Secondary	13 (12.87) [0.00]	13 (14.42) [0.14]	13 (12.36) [0.03]	13 (12.36) [0.03]		52

Column Totals	25	28	24	24		**101 (Grand Total)**

The chi-square statistic is 0.4275. The *p*-value is .934514. The result is *not* significant at $p < .05$.

Instruction Elem vs Secondary

:	2.35
Degrees of Freedom:	10
P value:	.05
Rows X Columns:	2x11

Preparation TRAD TP,PD vs ARL TP, PD

Results						
	Collaboration 1	Collaboration 2	Collaboration 3			***Row Totals***
T TP	10 (14.55) [1.42]	13 (12.27) [0.04]	17 (13.18) [1.11]			40
T PD	8 (4.00) [4.00]	2 (3.38) [0.56]	1 (3.62) [1.90]			11
ARL TP	5 (6.91) [0.53]	6 (5.83) [0.00]	8 (6.26) [0.48]			19

ARLl PD	9 (6.55) [0.92]	6 (5.52) [0.04]	3 (5.93) [1.45]			18
Column Totals	32	27	29			**88 (Grand Total)**

The chi-square statistic is 12.4566. The *p*-value is .052524. The result is *not* significant at $p < .05$

Preparation Assessment Traditional vs ARL

Results						
	Assessment 1	Assessment 2	Assessment 3			***Row Totals***
T TP	16 (15.89) [0.00]	12 (12.62) [0.03]	15 (14.49) [0.02]			43
T PD	5 (5.17) [0.01]	5 (4.11) [0.19]	4 (4.72) [0.11]			14
ARL TP	6 (6.65) [0.06]	4 (5.28) [0.31]	8 (6.07) [0.62]			18
ARLl PD	7 (6.28) [0.08]	6 (4.99) [0.20]	4 (5.73) [0.52]			17
Column Totals	34	27	31			**92 (Grand Total)**

The chi-square statistic is 2.1582. The *p*-value is .904592. The result is *not* significant at $p < .05$.

Preparation SEL Traditional vs ARL

Results						
	SEL 1	SEL 2	SEL 3	SEL 4		***Row Totals***
T TP	17 (16.77) [0.00]	20 (16.77) [0.62]	15 (16.77) [0.19]	13 (14.68) [0.19]		65
T PD	3 (3.10) [0.00]	1 (3.10) [1.42]	5 (3.10) [1.17]	3 (2.71) [0.03]		12
ARL TP	6 (5.68) [0.02]	6 (5.68) [0.02]	6 (5.68) [0.02]	4 (4.97) [0.19]		22
ARLl PD	6 (6.45) [0.03]	5 (6.45) [0.33]	6 (6.45) [0.03]	8 (5.65) [0.98]		25
Column Totals	32	32	32	28		**124 (Grand Total)**

The chi-square statistic is 5.2419. The *p*-value is .812731. The result is *not* significant at $p < .05$.

Preparation for Traditional Teachers TP vs PD **********

The chi-square statistic, *p*-value and statement of significance appear beneath the table. Blue means you're dealing with dependent variables; red, independent.

Results						
	SEL 1	SEL 2	SEL 3	SEL 4		***Row Totals***
T TP	17 (13.40) [0.97]	20 (14.07) [2.50]	15 (20.10) [1.30]	13 (17.42) [1.12]		65
T PD	3 (6.60) [1.96]	1 (6.93) [5.07]	15 (9.90) [2.63]	13 (8.58) [2.28]		32

Column Totals	20	21	30	26		**97 (Grand Total)**

The chi-square statistic is 17.827. The *p*-value is .000478. The result is significant at $p < .05$.

Preparation for ARL Teachers TP vs PD

he chi-square statistic, *p*-value and statement of significance appear beneath the table. Blue means you're dealing with dependent variables; red, independent.

Results						
	SEL 1	SEL 2	SEL 3	SEL 4		***Row Totals***
ARL TP	6 (5.62) [0.03]	6 (5.15) [0.14]	6 (5.62) [0.03]	4 (5.62) [0.47]		22
ARL PD	6 (6.38) [0.02]	5 (5.85) [0.12]	6 (6.38) [0.02]	8 (6.38) [0.41]		25
Column Totals	12	11	12	12		**47 (Grand Total)**

The chi-square statistic is 1.2378. The *p*-value is .743954. The result is *not* significant at $p < .05$.

Preparation Instruction TP vs PD

Chi-square Value: 20.30

Degrees of Freedom:	30
P value:	0.908342047329
Rows X Columns:	4 x 11

Preparation – Instruction Traditional TP vs PD

Chi-square Value:	12.68
Degrees of Freedom:	10
P value:	024
Rows X Columns:	1 x 10

The chi-square statistic, *p*-value and statement of significance appear beneath the table. Blue means you're dealing with dependent variables; red, independent.

Results						
	Collaboration 1	Collaboration 2	Collaboration 3			***Row Totals***
E TP	8 (11.03) [0.83]	9 (9.31) [0.01]	13 (9.66) [1.16]			30
E PD	10 (5.52) [3.64]	4 (4.66) [0.09]	1 (4.83) [3.03]			15
S TP	6 (9.93) [1.56]	10 (8.38) [0.31]	11 (8.69) [0.61]			27
S PD	8 (5.52) [1.12]	4 (4.66) [0.09]	3 (4.83) [0.69]			15
Column Totals	32	27	28			**87 (Grand Total)**

The chi-square statistic is 13.1578. The *p*-value is .040597. The result is significant at $p < .05$.

The chi-square statistic, *p*-value and statement of significance appear beneath the table. Blue means you're dealing with dependent variables; red, independent.

Results						
	Assessment 1	Assessment 2	Assessment 3			***Row Totals***
E TP	13 (12.91) [0.00]	10 (10.96) [0.08]	13 (12.13) [0.06]			36
E PD	5 (6.10) [0.20]	7 (5.17) [0.64]	5 (5.73) [0.09]			17
S TP	8 (8.97) [0.10]	7 (7.61) [0.05]	10 (8.42) [0.29]			25
S PD	7 (5.02) [0.78]	4 (4.26) [0.02]	3 (4.72) [0.63]			14
Column Totals	33	28	31			**92 (Grand Total)**

The chi-square statistic is 2.9496. The *p*-value is .815144. The result is *not* significant at $p < .05$.

The chi-square statistic, *p*-value and statement of significance appear beneath the table. Blue means you're dealing with dependent variables; red, independent.

Results						
	SEL 1	SEL 2	SEL 3	SEL 4		***Row Totals***
E TP	14 (13.18) [0.05]	16 (12.75) [0.83]	12 (13.60) [0.19]	9 (11.48) [0.53]		51
E PD	2 (4.13) [1.10]	2 (4.00) [1.00]	7 (4.27) [1.75]	5 (3.60) [0.54]		16
S TP	8 (8.52) [0.03]	9 (8.25) [0.07]	9 (8.80) [0.00]	7 (7.42) [0.02]		33
S PD	7 (5.17) [0.65]	3 (5.00) [0.80]	4 (5.33) [0.33]	6 (4.50) [0.50]		20
Column Totals	31	30	32	27		**120 (Grand Total)**

The chi-square statistic is 8.412. The *p*-value is .493221. The result is *not* significant at $p < .05$.

5 7 8 6
6 8 7 5

Reset

Chi-square Value:	18.43
Degrees of Freedom:	30
P value:	.95
Rows X Columns:	

Chi-Square Test Introduction

Just looking at Secondary TP vs PD Chi Square = 9.10 with 10 degrees of freedom and significant at .05

This was not the same for Elmentary Chi Square =8.35 with 10 degrees of freedom P =.59

In Vivo coding by Index Coding

Index Code:	Thematic Memos:
Which practices were early-career special education teachers taught in their teaching preparation program?	Classroom/ Behavior Management/relationship building I really learned a lot about in the teaching was about having the kids in groups and talking together. classroom management. About not calling kids out for talking, or acting up, or something like that. Just really loud in front of the whole room, because that will just turn them off. And they will hate you, because they don't want to be lectured in front of all their friends building relationships with students and family engagement. It helps a lot with classroom management. And then, of course, when we're writing IEPs, the more you talk to parents, the less problems you have. So those would be the top things. And then, I would agree with Rex too, about grouping students, like different strategies for grouping students, or different strategies for seating students. behavioral management strategies and just the different strategies available for different sorts of behaviors in different students, because it's not really a one size fits all part of teaching. You have to learn different strategies for behaviors, for different kids. And what works for one isn't going to work for all of them. So, I had a behaviors class that I got a lot from on different strategies to deal with different behaviors. I'd say that's probably the one I use the most. behavior management of students. What really stuck with me is when we are having students that are showing whatever sort of behavior in response to things. It's focusing on one behavior at a time instead of oh, if a student they're coming in, they're being loud, they're tapping on pencils or something like that. If I want them to just quote-unquote, have the right behavior in my classroom, I specifically only work on one of them at a

	time, until it gets better over time. And that could take maybe a week or more. So if it's tapping a pencil or something, and they're trying to get into a power struggle. Whenever I notice that they're not, just thank them right off the bat and say, Hey man, do you want some dumb dumbs? I love it when you give me time to speak. And then, over time they start to just fall in line into that. And then once I feel like I'm comfortable, like, oh, if they don't really tap their pencil anymore, let's work on raising their hands. Then I start giving them more attention towards raising their hands. So one behavior at a time. formative and the summative assessment. I really understand, you need to check for understanding. I've learned more from the mentor that they assigned us. They assigned you a mentor. I've learned more from them because she was a SPED teacher for many, many years
Index Code: What do teachers know about HLPs?	Thematic Memo : Had not heard HLP term previously/ Learned discrete practices/ Learned EBPs I had never heard of this term before until I took that little survey. But, once I was seeing it, I was like, oh, okay, I've heard this mention in the teaching and stuff. It just wasn't presented as clearly, like, Hey, look, this is a high leverage practice. Because all of the things, okay, I've heard about all these things, but I hadn't really had it presented like that. I don't even know if they have like a book that's about this or something. I don't know, you're the future, right. High leverage practices. (In undergrad) They give you strategies for high leverage practices, but there's not like a specific, this is what they are. But they derive from evidence-based practices, correct? That's what I remember the most, is that high leverage practices come from evidence-based practices. And like I said, they give you strategies and different examples of what those look like or what they are. But there isn't a specific list saying, this is what high leverage practices are. I actually never was really introduced to what high level practices were until you sent us the survey. But once you

	were like the survey that you sent, I kind of was like, what the heck is that? So I looked it up. And I say, I was introduced to a lot of the aspects of it, but more as like evidence-based practices and stuff like that for SEL, because all the classes that I take are for predominantly SEL and behaviors, and stuff like that. So I would definitely say that I've been introduced to a lot of the evidence-based practices for SEL. And that lucky, when I looked into what high leverage practices are, they definitely tie in a lot with the evidence-based practices that I've used for SCL and stuff, at least. (The first time I heard about HLPS was) when I took your survey. I didn't know what the definition of it was in the first place? When I was taking the survey, I didn't know that the things that you listed were high leverage practices at all. And so, if I were to come up with a definition, I would think it's like, oh no, I can't really define it for you. No. The questions you asked in the questionnaire, I did not know. the things that I did know I learned from my mentor, not from the ARL program high leverage practices. I was like, when I got your survey, I didn't even know what you were talking about. But then, my co-teacher said, oh, you do this, that and the other. And I was like, oh, if that's what we're talking about, I totally do all those things. So it was a verbiage thing for me at first.
Index Code: Which high-leverage practices do early-career special education teachers use most frequently?	Thematic Memo: Behavior management/ prompting/ scaffolding behavior at a time was mentioned, and I was like, yeah, that's something I'm really doing now. with this population I've got strategies because there's only so much I can do at a time. prompting and how you answer student questions- I go, well, what would you do first? Or how would you do this? I want you to show me. And they're like, well, I don't know. And I'm like, that's okay. But show me what you think you would do. Show me what you do know. And then a lot of the times they're on the right track. And then

	you can kind of correct them that way, as opposed to just constantly helping them right away, and giving them the answers, making them think it through. And then when you're asking them a question, sometimes you have to reword it or rephrase it, or just different prompting, I guess, in discussion techniques. I'm really encouraging them to say, well, show me what you don't know, so I could tell you what you do need to know. And with that level of scaffolding and that level of proximity, trying to get them to be comfortable with making wrong mistakes so I can give them immediate feedback. FBAs are considered high level practice, which is like 90% of my class. But I would say besides that would be just establishing, having consistency and a routine and stuff like that. My kids know exactly what we're going to be doing. I have a detailed schedule on my board.
Index Code: What is the most effective strategy or practice that you use in your work as a special education teacher and where did you learn that practice?	Thematic Memo: Prompting/ relationship building/ district purchased programs/ inclusion Prompting, wait time – learned in a classroom management course from the school district Just building those relationships. It's amazing how much more effort the students are willing to put in when there's that mutual respect there. Learned definitely at UNR and probably the basic level classes relationship building would be the biggest one for me, , I guess it's just a personality trait I picked up in my My ten years of bartending. relationship building and giving specific feedback. I learned one from my lead teacher and one from a seminar we took as a staff last year. putting them in leadership. And leadership here at the school, they kind of essentially, don't want them. And I go, well, first of all, you're gonna go participate. Not in the class, but participate and show then that you're on.

	First of all. Secondly, I'm going to employ them as a student leadership in my class. So I'm gonna put these two ladies in charge of planning activities. We have a trick or treat night. So I want them to write the letter to WinCo for the donations. I want them to figure out how many signs we need, and what activities we're gonna do. So I was really excited about this, it's a brand new thing. (Inclusion and writing for purpose) purchased a program called, Unique. Oh, that is very, very detail oriented. There's not a lot of room for, straying off topic. It gives you the lesson plan. It gives you the standards you're working on that day. It's basically packets that repeat, each month, just the subject matter changes, but the skill sets that they're growing. A little bit of one step algebra equations or one step multi-step equations, reading for comprehension, just the subject changes, the placement basically, but the skills that they build build throughout the year. It changes every month. So it's very structured. Your lesson plans are already structured basically for you.
Index Code: What do you wish you would have learned in your preservice teaching that would benefit you in your current role as a special education teacher?	Thematic Memo: Collaboration/ time management how to effectively communicate what we know as special education teachers to general education teachers. not taking on too much. time management, I suppose would've been beneficial for me Relationships and working with co-teachers nobody teaches you how to use Accelify. Nobody teaches you how to really write an IEP it's very difficult for first year teachers. Period. There's just, so many demands.
Index Code: HLP- Collaboration	Thematic Memo: Relationship building/ communication I guess. I just put myself out there and try and be help when it's needed, hoping that that help will be returned. Just build a positive relationship in your department. So you establish that and people can know that they can lean on you, and you can lean on them, hopefully, in a return kind of thing.

	We had a PLC recently, and by recently, I mean like a couple months ago. Where we were talking about, we sent out a survey to the staff to see if they knew what a specific accommodations were. And some of them really didn't know how to administer those accommodations. And they said, well, if the student asked for it, then I'll see what about it. But also a lot of them didn't know what does an outline look inside computer science or something, like guided notes or something like that. So they didn't know how to administer some of the accommodations. So what we did to help that is that, our department was split off into the different content areas and they said, oh, you're going to be with math and science. You guys are going to talk about a dummy IP at a glance, and explain how we can probably work these accommodations in the classroom, based off of what we were pushing to and stuff. So that's kind of how we tackled that one thing. And mainly that's the accommodations. Because some teachers like, I don't know how. Do I point them out and say, do you want me to read these test items to you? Or do you wait for them to ask? Or how do I let them know if this is a word processor or not? Things like that. open communication too on the job. Obviously, you try to have that respectful relationship with them, and you try to collaborate. Sometimes just no matter how many emails you send, and how many times you go look for them. And even when you go look for them, you don't always have time to physically track every teacher down. Especially when you're at the big schools. Especially, high schools and you're having to walk clear across campus to get input for an IEP because they don't respond to an email. One of the things I hate doing this, because I feel like a babysitter and you just feel like you're, I don't know. But it's giving them like deadlines. So when you send an email saying, I need this input by this day. And you know, you give yourself deadlines too for when you send those emails out. Working with para-professionals has been the experience, because every time I have something not fun happen, I think like, well I've now learned. But I mean, right now I only have one person with me in the room as an aide, but I'm really happy with her because she's doing an amazing job. That I've had other people that they weren't able

	really to do the job. It was more of a can't do, not a won't do. And so, that's something I'm trying to continually work with and like, Hey, we gotta put the phone away, and we're here for the kids. And unfortunately, this is just how it goes, there's, I want to do the best practices of not talking over the kids, and just really concentrating on them so that we can really learn, and use the time that I have with them, and not just babysit. But iI'm not like a real forceful person about, Hey, we're going to do it like this blah, blah. And so, I'm trying to figure out how to do that. I like working with other people. I ask my paraprofessionals, you know this student, I'm coming into your program, what do you think? We collaborate a lot and there's no end to who you collaborate with. (Laurie) with my teacher assistants I co-teach in front of the kids. We play back and forth, talk to each other, taught a lesson together and stuff.
Index Code: HLP- Assessment	Thematic Memos: District purchased programs/ difficulty with getting accurate assessment results For assessments, I do usually monthly progress monitoring on the computer using AIMS WEB, for academic goals. But for behavioral, I do all project-based assessments. So it's all something that can be individualized for them. They have an input in it. So it can be something like a poster, or presentation. (Max) our unique curriculum has for our kids. So at the beginning of each month we have a pretest about our curriculum, what our theme is of the month, and then it's different levels. So some kids are higher than others. So there's like some kids that are nonverbal and have to point to pictures. Others can just fill in blanks, or you can discuss it with them. And then we have other things that's like a benchmark testing I'm supposed to do like three times a year. And that's a little bit harder. And the hardest thing of it is some of these kids, they're still not quite getting it. I'm trying to get around how to get them to really answer what they think. I've got kids, that'll just push answer C, answer C, answer C. Or I had one kid when I did like the non-testing, he would just sit there and he wouldn't do

	anything. We did that for about 10 or 15 minutes, well, I guess we'll try tomorrow. And on his test, I had a lot of no response and I feel bad about that because he's very smart and I know that he knows all kinds of stuff. But if he doesn't want to work, he doesn't want to work. And then you're on a time limit. Like, no we've got to do this, we gotta get this finished. So yeah, what did I say? We have assessments, but sometimes it's hard to get them to really do it. Because sometimes they're just pushing answers. C. We also do the Ames web testing. For math support. We also use our monthly data forms also, where we're asking teachers specifically how well is the student meeting this goal, whatever the goal is. And then they tell us we haven't met it yet emerging, developing, meeting standard or exceeding. Resource students at the resource, like in the push in areas, they mostly just do the assessments that the gen ed teachers come up with. Obviously, some students have accommodations where they don't do all the questions or they have modified. But for the most part they just do those and we measure it based on that, and what they're doing in their assessment, those are all like standard based assessments. And then, you do progress monitoring throughout based on the assignments that they're doing, and what they're doing on those. In math, that's a little bit more concrete. In ELA, on the other hand, we're much more flexible with what students do for assessment. Because it's easier to be, you can be. So sometimes students may have to write an essay, but maybe certain students are speaking, or sharing what they know as opposed to writing it down. You know, alternative assessment options. So PowerPoints, creating a PowerPoint, doing a worksheet, writing an essay, just different modes of showing what they know. I had full intention of doing AIMs web this year, but time was the thing. board one word that describes your field trip. What you're feeling. So I learned that in ARL. Sometimes they turn to their partners and share. I think I learned that in, at GCU. Thumbs up, thumbs down. I love classroom discussion. I love cold calling on students.

	I'd give then vocabulary words where they would have a copy of the word on their desk, along with the definition. And we would discuss it and I'd ask for examples, but I would have then pair up and then, talk as a team, and come up with an example. And she had me pass out little cards. And she's like, I want them to commit individually, to an answer, before they pair up.
Index Code: SEL HLP	Thematic Memos: District purchased programs/ Relationship building/ goal setting Check in, check out is my biggest one. I use that every morning. And when we had a different schedule, I had every one of my kids in the very beginning of the day, and the very end of the day. So they started their day with me and ended it with me. So I could check in with them every morning, and see how they were doing, and how they needed me to help them with the rest of their day to make sure they're successful. And then the end of the day they spent with me, because that's when behaviors are usually the worst with my kids. So they got to spend those with me. Learned in behavior class at UNR. In my class we do zones of regulation that I learned from another teacher. We just talk about, are we red, yellow, or green? And then we talk about if we're red, how to get back to green. And that's about breathing, or talking, or exercising, or going for walks, taking a drink of water, stuff like that. And I think that these are really good effective skills, especially the breathing, and calming down. goal setting. We do it on Mondays and then reflect goal setting on Fridays. Basically on Mondays, I give everyone a sticky note and I say, what is your goal this week? And then I tell them it doesn't have to be school related. It could be, if you keep in mind how many days we have left. Or it could be something at home, something social with your friends or whatever. And I give them the options if they want to share it with me or not. I give them a few minutes to think about it and write it down. And I collect the sticky notes and then the end of the week, I give it back to them, to give them time, to reflect on it. To

	see how would they rate themselves. And I ask them when do you feel like you accomplished it? I work to build relationships. Where you can take the time to focus on those SEL matters or behavior issues. You can see that behavior support if they're getting in trouble in other classes too. I also organize the student schedules so that I can see them during enrichment or STSS so I can check in with them and build those relationships. reinforcing the good behavior with him. Before he went on a field trip, he taught the class how to behave on the bus, and gave him some ownership of the rules. That was like the most amazing thing that I've seen. And that was on the recommendation of the behavior consultant. also do lots of social, emotional as far as following directions, feelings of others. How can you say that better? Lots of practical things all about being super practical. Like you know what, you have a high regard for every student, but at the same time, you're telling them, honey, you stink, you've gotta go put on some deodorant right now. And some of our best lessons have actually been a result of incidental learning. Also started a program where, once a month, the leadership kids, six of the students in my class who are generally all on the spectrum, and who do not have difficulty with interaction with gen ed peers. And we have lunch together up in her room.
Instruction HLP	Thematic Memos: flexible grouping/ building relationships/ behavior management classroom to be in stations, so I could teach them their math in their math class, but also work on their IEP goals at the same time. So I have three stations, so that having that variety and flexibility. I have a content station where I do mini 15 minute pre-lesson of what they're going to learn a week later. So that the information is familiar when they get to it, and they already have notes on it. And then they have a goal station where their folder has specific assignments and things to practice on their goal. I don't even tell them how to do it. I say, try it. And on Wednesdays, we'll go over and I'll tell you what to do next time. And then they just kind of learn from that. And

	then an enrichment station where they're just working on maintenance to maintain things like, who knows how to use fractions if they're not using fractions constantly? the relationships, like I have great relationships with my kids and I have really good relationships with the parents and I really strive for that. Because whoever said it that's the most important thing. And I really suffered the beginning of the year because I had not met a student's parents, and things were starting to get really sideways. But now we're kind of way better now that I've met them a few times, but also I've been trying to just kind of hang around and get to know the name of other kids that are in the class, in the school. That they need friendly people for them to say hi. be relating the instruction to the student. I start all my lessons with a bell ringer, to tie in writing because all my kids have writing goals. So it's a bell ringer that kind of ties in SEL to them. So there's just a prompt on the board for them to just openly write anything they want. And that's kind of a prelude to the lesson itself. So like our following up today was about what they would fix about the school. If they had an opportunity to fix something, what they would like to see differently about the school. Which is going to tie into our lesson about engagement in the communities and stuff like that. So, we just try and tie in something that they can have an opinion on, or just them to the lesson itself. Knowing about ABC and seeing behavior and all that stuff. There's a reason why students behave a certain way and it's just them trying to tell you something. When a student tells you, f..you, it doesn't mean, fuck you. It's just like, oh, something's bugging you. Don't take things personally because they're just trying to tell you something. Whether it is that or something, trying to figure out what caused them to get that way? And how we can help them to calm down, find their feet? And how can we tackle this a different way together? Instead of just me, like do this thing. You don't talk to me that way behavior management is definitely, I think, the biggest thing I got out of it like this year getting practicum students into my class this year was pretty rad. Because I

	think everybody should have to see the most severe behaviors there are in a school. using picture supported reading. I think that differentiates work for kids, but I have kids with visual impairments, kids with hearing impairments. So assistive technology, we're using all over the place, classroom laptops. I let kids use their phones because we're in high school. We do job training, tons of job training. Our group operates the student store. I've been having them do debates, so that they can use some critical thinking skills. What you are for uniforms, you're not for uniforms. And get out your phone, look it up. I don't care, but you're gonna present. Everything's presentation. Even the kids that are nonverbal love to stand at the front of the room and show their artwork, or their poster, or their teacher-assisted work. everything I do in here, I try to have some sort of purpose. How would this translate outside of this classroom? Because, as the behavior specialist comes out, Robert Simon, he's like, does it really matter if they can add 150 plus 30 without a calculator? Is that honestly how they're gonna be judged in life? I'm like, no. It's like exactly. That's not the goal of this.

Appendix D: Focus Group Data Clustering

Sample of In Vivo Coding

Interviewer: So shifting to high leverage practices specifically. Will you share your understanding of what HLPs are, and how they're used in teacher education? And how that may translate into the classroom setting?	
I had never heard of this term before until I took that little survey. But, once I was seeing it, I was like, oh, okay, I've heard this mention in the teaching and stuff. It just wasn't presented as like, Hey, look, this is a high leverage practice. Because all of the things, okay, I've heard about all these things, but I hadn't really had it presented like that. I don't even know if they have like a book that's about this or something. I don't know, you're the future, right. High leverage practices.	[1] "**never heard of this term**" [2] **"hadn't had it presented like that."**
Interviewer: any ideas about high leverage practices?	

I actually never was really introduced to what high level practices were until you sent us the survey. But once you were like the survey that you sent, I kind of was like, what the heck is that? So I looked it up. And I say, I was introduced to a lot of the aspects of it, but more as like evidence-based practices and stuff like that for SEL, because all the classes that I take are for predominantly SEL and behaviors, and stuff like that. So I would definitely say that I've been introduced to a lot of the evidence-based practices for SEL. And that lucky, when I looked into what high leverage practices are, they definitely tie in a lot with the evidence-based practices that I've used for SCL and stuff, at least.	[3] "**never introduced to high level practices**" [4] "**introduced to a lot of the aspects of it, but more as evidence-based practices**"
Interviewer: did you hear about high leverage practices in your undergraduate?	
Yeah, we did. I don't, know if there was like a specific, this is what they are. They give you strategies for high leverage practices, but there's not like a specific, this is what they are. But they derive from evidence-based practices, correct? That's what I remember the most, is that high leverage practices come from evidence-based practices. And like I said, they give you strategies and different examples of what those look like or what they are. But there isn't a specific list saying, this is what high leverage practices are.	[5] "**they derive from evidence-based practices, correct?**" [6] "**there isn't a specific list saying, this is what high leverage practices are.**"