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PROGRAM**

EXECUTIVE SUMMARY



Prepared By:
Chalon Jones

Advisor:
Dr. Eve Rifkin

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ABOUT THE AUTHOR

Dr. Chalon M. Jones is an instructional coach and educational consultant currently leading interventions for FirstLine Schools in New Orleans, LA. A former special education teacher, peer mentor, and curriculum developer, she is passionate about discussing and uncovering disparities within the educational outcomes of underrepresented students of color and across the neurodiversity continuum. Dr. Jones holds a B.S. in Middle Level Science Education with a minor in Social Studies Education from Wilmington University and a M.Ed. in Education Policy and Leadership from American University. Dr. Jones also serves as the CEO and Creative Director of Chalon Creates! an education consulting firm specializing in supporting teachers and schools with creating inclusive, antiracist, and culturally responsive classroom communities.

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EXECUTIVE SUMMARY

Area of Inquiry

In recent years, the public perception of becoming a teacher has dwindled as the work demands on educators have increased, and fewer people enter the field. This shortage is amplified within special education, where teachers need to develop a unique set of skills to support their student's academic and social-emotional needs. As more special education teachers enter the field through alternative certification programs, additional research on the strategies to support their instructional development, support of neurodiverse students effectively, and remain within their position is needed. This study aimed to determine the practices employed by special education alternative certification programs to develop novice special educators into highly-effective practitioners.



Former KIPP DC Fellowship In Special Education Participant

Conceptual Framework

This study leveraged Brownell et al.'s "Framework for Developing Advanced Beginners" (2019) to determine the actions special education teacher preparation programs need to incorporate to support the development of participants. Based on their research, four features (modeling, feedback, analyzing one's own performance, and interleaving) "are likely to foster beginning special education teachers' learning, particularly when these features are combined in varied practice opportunities" (Brownell et al., 2019, p. 340). Brownell et al.'s "Framework for Developing Advanced Beginners" (2019) incorporates components of Constructivist Learning Theory and Social Learning Theory including real-life application in order to deepen their understanding of their role and be able to perform their duties at a high level and the use of strategic modeling and practice of new skills or behaviors (Chuang, 2021).

Research Question

This capstone aims to support KIPP DC's Fellowship in Education as they support novice special education teachers by answering the following research question:

How does an alternative certification program structure coaching and professional development to support the development of new special education teachers?



Former KIPP DC Fellowship In Special Education Participant

Findings

- Former Fellows remarked that they needed more support during and after the program to successfully implement strategies learned.
- Current and Former Fellows with prior special education teaching experience believed the program effectively supported their ability to provide high-quality instruction to neurodiverse students.
- Current and Former Fellows believed time to collaborate and reflect on their instructional practices with members of their cohort directly impacted their success within the program.

Recommendations

- The Fellowship should incorporate elements of interleaving and analyzing one's own performance to increase the retention of knowledge and skills.
- The Fellowship should provide differentiated sessions for Fellows with and without special education experience to tailor learning to meet Fellows instructional needs.

INTRODUCTION

Over the past 20 years, our K - 12 classrooms have become increasingly academically, culturally, and linguistically diverse. As a result, effective teacher preparation has become a priority for researchers and practitioners. The public appeal of becoming an educator has fluctuated over the years, with fewer people graduating with degrees in education and becoming classroom teachers, especially within urban areas. As the field of education continues to adjust to new challenges and opportunities for growth, schools are working to adapt their approach to meet the needs of their communities. To support the development of more highly qualified teachers, K-12 schools have leveraged the use of alternative certification programs to fill critical, hard-to-fill teaching vacancies, including roles within special education.

The purpose of this capstone study is to examine the practices necessary to develop novice special education teachers into highly effective special educators equipped to support diverse student populations through alternative teaching certification programs. This analysis will focus on the Fellowship in Special Education's practices. The Fellowship is a subsidiary of KIPP DC, and an alternative teaching certification program specializing in special education. As this program approaches its eighth year of operation, the Fellowship has a range of participants with diverse perspectives and educational experiences that have informed recommendations intended to improve organizational practices. The findings in this study may provide insight into the process, procedures, and techniques needed to develop highly effective special education teachers.

This capstone project is centered on the Fellowship in Special Education, a subsidiary of KIPP DC. The research aim was to understand how the Fellowship supports novice special educators as they become highly effective teachers during their year-long alternative certification program. Findings from this project are intended to inform program staff regarding improvement strategies to ensure that the structure of the program and support provided to Fellows meet their needs. While many aspects factor into the improvement of an organization, the research design is focused on exploring the following question: How does an alternative certification program structure coaching and professional

development to support the development of new special education teachers?

The instructional development of novice special educators across school types and settings has been examined in a variety of ways (Dieker et al., 2003; Brownell et al., 2005; Brownell et al., 2005; Brownell et al., 2010; McLeskey et al., 2019). Current research focuses on development within university-run teacher preparation programs with limited research on educators completing alternative certification programs (Scott et al., 2019; Keller et al., 2008; Veale et al., 2013; Esposito & Lal, 2005; Sayman et al., 2018; Ricci & Zetlin, 2013). As more educators are entering the field through alternative pathways, increased insight is needed to support novice special educators as they prepare to support culturally, linguistically, and academically diverse students. Understanding how these teachers should be supported as they become highly effective practitioners will allow those who operate alternative certification programs to tailor instruction to the needs of these educators. The retention of special educators is essential to the long-lasting support of neurodiverse students.

Recommendations, informed by organizational context, a review of literature, and findings from this study will be presented to the Fellowship in Special Education. These findings and recommendations will allow the Fellowship to create an improvement plan designed to support the continued development of the novice special educators they serve.

ORGANIZATION CONTEXT

KIPP DC is a charter management organization founded in 2001 that serves over 6,800 students from ages 3 to 18 in Washington, D.C. (KIPP DC, n.d.). This D.C.-based branch is part of the larger Knowledge is Power Program (KIPP) network of schools that serves over 100,000 students across 25 states (KIPP, n.d.). KIPP DC operates 19 early childhood, elementary, middle, and high schools across seven campuses in wards 5, 6, 7, and 8 of the District of Columbia (KIPP DC, n.d.). Of the students enrolled, over 1,000 students receive special education services (KIPP DC, n.d.). KIPP DC employs over 600 general education and special education teachers (KIPP DC, n.d.). To fill a gap in the quality of teachers needed to serve in high-need subject areas such as special education, math, and literacy, KIPP DC developed the Capital Teaching Residency (CTR), an alternative teacher

certification program, through a partnership with The New Teacher Project (TNTP) (KIPP DC, n.d.). The program was designed to provide participants a year of support from a mentor teacher and direct instruction on effective teaching and classroom management (KIPP DC, n.d.). Since the program's inception, 660 Capital Teacher Residents have matriculated through the program (KIPP DC, n.d.).

After eight years of implementation, KIPP DC set its sights on creating a pathway for new special education teachers. To support the development of highly qualified special education teachers, KIPP DC successfully applied, in 2012, to the Office of the State Superintendent of Education (OSSE) Office to run their own year-long, alternative certification program specializing in special education teacher certification and was granted permission. The Fellowship in Special Education (Fellowship) began in 2014 - 2015 with a cohort of 10 participants employed as teachers in KIPP DC schools. In the school year 2018 - 2019, the Fellowship expanded its enrollment to external participants who were employed within other local public schools. Every year enrollment has steadily increased to 60 participants in the 2020 - 2021 cohort. KIPP DC sponsors the cost for KIPP DC employees, and teachers from other public schools must pay tuition at the cost of \$8000.

As the Fellowship prepares to expand, even more, program staff and leaders within the KIPP DC network want to evaluate their program to ensure that both internal and external participants are adequately prepared to support students receiving special education services. This project seeks to determine current promising practices within the Fellowship and those that need additional development to meet the Fellowship's desired results. Because the Fellowship supports the development of educators from various D.C.- area schools, the program staff seeks to determine if additional methods or techniques are needed to support the success of increasingly diverse cohorts.

Problem of Practice

Developing the next generation of special educators is required to support the continued academic and behavioral progress of neurodiverse students across the country. The increasing need for special education teachers across school types and geographic locations shows that schools are struggling to hire teachers who are able to support students with mild,

moderate, and severe disabilities and ensure students receive the services they are entitled to within their IEPs. As school districts and charter management organizations search for highly effective special education teachers, they are also challenged with retaining the educators currently on staff. Without creating pathways to support the development of highly effective special education teachers, students will continue to receive less than adequate instruction from less capable educators. Due to their unique position within D.C.'s education community, the Fellowship has an opportunity to develop early-career educators with different experiences into proficient special educators and directly impact the support students receive.

The Fellowship is a school year-long program that provides participants with targeted professional development and coaching designed to build their capacity to perform a special education teacher's functions. The program also credentials participants with a special education teaching license. Fellows attend professional development sessions in the summer and weekly during the school year in order to develop their content knowledge in special education. Sessions are differentiated to support the needs of new special education teachers based on grade band (i.e., early childhood, elementary, middle school, high school) or instructional content area (i.e., literacy, math, science, and social studies). During the Fellowship, they are expected to complete coursework aligned to their new knowledge. They also receive school visits from program staff intended to support their ability to meet the duties of a special education teacher. Visits from program staff allow Fellows to receive in-the-moment coaching and check-in with their school leadership team to gauge their development.

As the Fellowship has expanded to include external participants from various local school types, participants and program staff have noticed a challenge in providing a consistent development experience for all Fellows. All Fellows, regardless of school affiliation, rate the professional development they receive during synchronous lessons facilitated by program staff as satisfactory according to anecdotal reflections from program staff but have differing opinions on the coaching provided throughout the year-long program. According to anecdotal recollections from program staff and historical survey results of participants, Fellows working at one of KIPP DC's schools when they complete the program are more likely to be satisfied with all aspects of the program than Fellows at

non-KIPP schools who have previously remarked that they needed an adjustment period to learn the “KIPP way” and the requirements for engagement needed during professional development sessions. One variable that may be impacting this is cost, which varies based on available subsidies provided by the schools. Fellows who work in KIPP DC schools pay nothing out of pocket, while external Fellows who do not have this support from their organizations pay \$8,000. Program staff has shared that Fellows who do not receive a subsidy from their school typically have less help from their school leadership teams, which are also harder to connect with to discuss a Fellows progress within the program. Due to the perceived conflicting experiences of their internal and external applicants, program staff would like to know if they need to change professional development sessions, coaching opportunities, or their commitment level from Fellows organizations in order to provide a consistent experience for all participants. Program staff would like to ensure that the Fellowship offers a solid pedagogical foundation to special education as well as the practical skills needed to be a highly effective special education teacher.

LITERATURE REVIEW

The literature seeks to understand the factors that support the development and retention of early career special education teachers enrolled in an alternative certification program. This literature review will examine the following areas: strengths and limitations of alternative certification programs, pedagogical knowledge that shapes the development of an effective special educator, elements that promote retention of special education teachers in the face of a nationwide special educator shortage, conditions special education teachers need to do their best work, and how instructional coaching has been used to support continued development. To determine effective strategies when supporting novice special educators within an alternative certification program, over 30 peer-reviewed pieces of literature were analyzed for this capstone project. Each of these research areas helps to further illustrate how the alternative certification programs need to adapt to support diverse educator and staff populations and provide an answer to the focal research question.

Pedagogies of Practice

Current research reflects the need to balance strengthening novice special educators' pedagogical knowledge of instructional practice with practical application to ensure they are highly effective instruction within their classrooms. As special education teachers participate in professional development, Valenzuela et al. (2000) assert that sociocultural theory, popularized by Vygotsky, has been adapted to explain the cognitive functioning of learners, but neglects to address that power dynamics and privilege are present within culturally and linguistically diverse classrooms. To address this gap, Valenzuela et al. (2000) suggest incorporating elements of critical theory within development sessions to help educators analyze how students are marginalized within the education system, and as well as the social inequity and injustices that are built into the current system. By acknowledging the systemic racism and oppression built into the education system, educators and leaders are more equipped to dismantle and discontinue practices that do not support all students (Valenzuela, 2000). This approach would allow special educators, who have the unique privilege responsibility of supporting students across culturally and academically diverse backgrounds, to understand how our current education system needs to change to meet the needs of all students.

With a solid understanding of the pedagogical frameworks and structural inequalities built into our education system, novice special educators can then deepen their instructional knowledge and use of high-leverage practices through intentional development and scaffolded practice. Brownell et al. (2019) analyzed pedagogies that have been used in teacher preparation programs within a variety of settings, from colleges to in-class settings, to determine the best way to teach novice special educators high-leverage practices (HLPs). The Council for Exceptional Children (CEC) developed a list of HLPs to describe the behaviors of effective special educators and allow novice teachers to understand what practices they need to master to support diverse student populations (Brownell et al., 2019). Brownell et al. (2019) developed "A Framework for Developing Advanced Beginners" that incorporates andragogy, Constructivist Learning Theory, Social Learning Theory, and cognitive science elements to support the development of novice special educators. By incorporating modeling, feedback cycles, analyzing one's performance,

and interleaving (combining two or more related skills within practice opportunities), these educators can dive into intentional practice that allows new skills to become part of their instructional practice (Brownell et al., 2019). To ensure that each feature of the framework supports the development of educators, they should have enough time to learn new skills during scaffolded and cohesive practice opportunities (Brownell et al., 2019). van de Pol et al. (2010) researched the effectiveness of scaffolding in building a learner's development and determined that this approach provides an interactive process that allows learners to acquire new knowledge and skills with adequate guidance until they reach mastery. By tailoring support to meet a novice special educator's needs, professional development can be differentiated with intensive support faded and responsibility transferred to the learner (van de Pol et al., 2010). Interleaving the practice opportunities of learners and allowing them to practice multiple, interrelated skills supports an educator's ability to process how similar skills are related and effectively used within the classroom (Dunlosky et al., 2013). This approach allows novice educators to deeply understand the information they are learning and is more likely to be retained within their long-term memory (van de Pol et al., 2010). The elements presented by Brownell et al. (2019) reflect an approach that can effectively transition a novice special educator into a highly effective practitioner.

Brownell et al. (2019) created a framework and description of pedagogies that can be used to develop teachers in all content areas and grade levels as they learn "high-leverage practices (HLP)." They describe "pedagogies of enactment" that include a continuum that supports the use of HLPs authentically through case studies, video analysis, virtual simulations, and rehearsal with the support of a classroom-based coach (Brownell et al., 2019). By using research on the development of HLPs and cognitive science, the researchers discuss how these pedagogies can be scaffolded over the duration of a teacher education program to support continuous learning (Brownell et al., 2019). Brownell et al. contend that creating a commitment to implement HLPs that incorporate the practice of critical skills is necessary to combat increasing special education teacher shortages. "Understanding how practice-based opportunities to learn HLPs can be implemented to support these teachers, and how assessment can be used to document the ways in which all new teachers

are acquiring HLPs will be essential to demonstrating that every new teacher is competent to teach students with disabilities” (Brownell et al., 2019). Allowing new teachers to understand the pedagogical foundation of their practice allows them to feel more connected to their work and remain within their role for longer periods of time (Brownell et al., 2019).

Conditions Needed to Meet Role Responsibilities

The existing literature suggests that higher levels of induction support allow new special education teachers to feel more prepared to acquire the knowledge and skills necessary to meet instructional demands and compliance obligations. Billingsley et al. (2004) examined over 1,000 early-career special educators using data from the Study of Personnel Needs in Special Education (SPeNSE). The researchers created a profile of their induction support, working conditions, and career plans to determine how the support received at the beginning of their career impacted job satisfaction and the ability to support their students effectively (Billingsley et al., 2004). After reviewing all available data, Billingsley et al. (2004) concluded that school districts need to provide “systematic and responsive induction programs for all beginning special educators” and “state education agencies can provide leadership by requiring such programs and making funding available” (p. 345). Brownell et al. (2010) examined how special education teacher quality and preparation has changed over time in response to new developments in special education policy, practice, and research. Brownell et al. (2010) asserted that the current training provided to preservice special educators is inadequate and these teachers need to acquire more practical skills in order to be effective. Receiving induction support is essential for educators entering the classroom through alternative pathways (Dierker et al., 2003). In addition to initial induction support, current research asserts that teaching novice educators how to best support students’ academic and behavioral needs leads to more initial success. These findings align with Brownell et al.’s (2010) assertion that new special educators should participate in induction programs that address their unique needs, role within their school community, and the population of students that will teach. Many educators entering the field through alternative pathways are placed in urban, multicultural environments and need support understanding the students they serve (Dierker et al., 2003). An effective induction program should also feature modeling that helps connect

pedagogy to practice and allows novice educators to learn how to support students with a variety of academic and social-emotional needs (Brownell et al., 2005).

In order for special educators to become highly effective practitioners, they need intensive support to ensure academic progress. McLeskey et al. (2019) examined the practices of highly effective special education teachers on student achievement and well-being. They asserted that several effective practices to support the academic and behavioral needs of students are known, but they are inconsistently implemented across school settings (McLeskey et al., 2019). The researchers provided a description of new developments in teacher preparation programs that support novice teachers and a set of high-leverage practices that were approved by the Council for Exceptional Children (McLeskey et al., 2019). As a curriculum for special education teacher preparation is developed, the researchers suggest these high-leverage skills should be incorporated (McLeskey et al., 2019). Brownell et al. (2010) suggest using a framework using components of Response to Intervention (RTI) that allows educators to receive the support they need based on their current capacity. This approach allows special education teachers to receive needed coaching and feedback to effectively support the students they serve (Brownell et al., 2010). This approach would also allow special educators to receive targeted support on areas they find the most difficult to implement like creating individualized support plans for students, adapting instructional strategies for neurodiverse students, and effective behavior management techniques (Bruno et al. 2018). Instructional coaching has also been shown to support the development of early-career special education teachers.

Retention of Special Education Teachers

Supporting novice special educators is not enough if they do not feel their new career is sustainable. On average, 8% - 10% of special educators leave the field each school year and there is a persistent shortage of fully certified teachers within the nation's classrooms (Wasburn-Moss, 2005; Billingsley & Bettini, 2019). To support students in need of specialized instruction, school districts sometimes provide provisional teaching waivers to unqualified educators with limited experience working with neurodiverse students or within the legal parameters of a special education classroom (Nance & Calabrese, 2009). These unqualified and uncertified teachers include novice educators with fewer than 3 years of

experience and lack the skills needed to handle unique instructional obstacles (Billingsley, 2004). Developing a highly qualified teaching force of special educators significantly increases student achievement; creating an environment that cultivates and retains these educators is essential (Billingsley, 2004).

Research shows that effective induction programs and continued professional development increase the likelihood that special education teachers will stay in the profession. Gersten et al. (2001) concluded that special education teachers were learning most of their responsibilities on the job and through informal networks. They urged school districts to provide increased opportunities for special education teachers to engage in ongoing professional development and interact with colleagues to reduce feelings of isolation (Gersten et al., 2001). Billingsley (2004) similarly concluded that induction support for novice educators should be provided to allow these teachers to develop the pedagogical understanding and skills needed to improve educational outcomes, reduce stress, and increase the likelihood that they will remain within their role. Billingsley (2004) suggests that “special educators who are younger or inexperienced are at a higher risk of leaving than their older and more experienced counterparts” (p. 53). To retain these teachers, support from their school leadership and district/central office teams coupled with the creation of ongoing learning opportunities has allowed novice special educators to understand ways they can positively impact student achievement (Gersten et al., 2001). Adding the support of a mentor has been shown to increase the retention of new special education teachers which has a direct connection to student achievement (Billingsley, 2004; Gersten et al. 2001).

Targeted professional development opportunities, coupled with a supportive school climate and access to mentors, have also been shown to increase special education teacher retention. Butler (2008) supports this assertion and remarks that when special education teachers feel included in their school communities, feelings of isolation are less likely. Teachers who were part of strong professional communities are more committed to its success and exhibit “service ethic,” a sense of care for students that leads to high expectations about their success (Gersten et al., 2001). An increase in feelings of isolation makes it more likely that an educator will leave their school community (Butler, 2008, Billingsley & Bettini, 2019). This feeling of connectedness also increases the likelihood that special

educators will be supported by the school leadership teams and feel comfortable asking for assistance (Billingsley, 2004). Novice educators benefit from mentors that work in similar roles but have no ties to their formal evaluation (Wasburn-Moses, 2005). An opportunity to have a school community and dedicated colleagues who connect them to their school community is essential to retaining novice special educators and creating a group of highly effective practitioners who can support diverse student populations and fill the widening gap of special education teacher vacancies. In order to adequately support these teachers and ensure they remain in their roles, school communities need to provide higher levels of support.

Instructional Coaching to Support Development

In recent years, the focus on teacher effectiveness has shifted from classroom management to strategic instructional delivery. As a result, researchers have evaluated the use of instructional coaches to support the professional development of educators. Instructional coaches are master educators who have had success supporting students to meet academic and socio-emotional challenges who provide intensive professional development to teachers (Peterson-Ahmad, 2018; Knight, 2005; Knight & Nieuwerburgh, 2012). They develop partnerships with their teachers and help them determine their current performance level, create goals to improve their practice, and propel the proficiency of all educators within their school (Peterson-Ahmad, 2018; Knight, 2005; Knight, 2012). Instructional coaches are uniquely positioned to assist various educators to adjust their approach to meet the needs of the students they serve based on the feedback cycles they lead for the teachers on their caseload (Knight, 2005). Researchers have found that the intensive professional development provided by instructional coaches has a positive impact on improving instructional delivery and the academic results of students, especially when provided to early career educators (Brock & Carter, 2017; Reddy et al., 2021; Knight & Nieuwerburgh, 2012; Peterson-Ahmad, 2018). Devine et al. (2019) evaluated the use of instructional coaching programs in order to improve teacher effectiveness. The authors contend that instructional coaching can support the fidelity of implementing new instructional practices and increased student achievement using Knight's model for coaching, The Impact Cycle, was effective in supporting the development of all teachers regardless of the content area (Devine et al.,

2019). The researchers assert, “Instructional coaching can support schools in implementing new teaching practices in a sustained way. Instructional coaching also ensures that teaching practices are implemented with fidelity, ensuring systematic, high-quality implementation” (Devine et al., 2019). Peterson-Ahmad (2018) contends that the use of instructional coaching allows pre-service teachers to “practice and fine-tune” the skills they are learning while receiving immediate, actionable feedback that allows them better support the students they serve. Instructional coaches are able to model effective instruction, strategies to handle tricky classroom dynamics, and ways to refine instructional delivery to meet the needs of diverse student populations through increased reflection and discussion (Peterson-Ahmad, 2018).

Although prior studies have evaluated the effectiveness of instructional coaches, there is limited research on their use with special educators. Brock & Carter (2017) conducted a review of research literature to determine practices that support the development of pre-service teachers and paraprofessionals for students with disabilities. They determined that a combination of modeling and feedback, similar to what is provided within an instructional coaching partnership, contributes to greater fidelity when implementing interventions (Brock & Carter, 2017). An existing coaching relationship allows educators to receive feedback from someone dedicated to their growth and can help them meet predetermined goals (Brock & Carter, 2017). Reddy et al. (2017) compared the effects of coaching for general education and special education teachers and found all teachers benefit from “evidence-based, practical, job-embedded professional development” that improves instructional delivery and the use of behavior management practices (Reddy et al., 2017). Reddy et al. (2017) found that prior to receiving coaching support, some teachers were using research-based practices, but they were not aligned to recommendations from existing literature (Reddy et al., 2017). When provided instructional coaching, participating teachers improved their ratio of using positive behavior supports with their students, the focus of study (Reddy et al., 2017). While research surrounding the use of instructional coaches to support special education teachers is limited, initial results are promising and should be considered when supporting the development of these educators (Reddy et al., 2017; Brock & Carter, 2017).

Strengths and Limitations of Alternative Certification Programs

Due to a chronic shortage of special educators across the United States, school districts have explored using alternative certification programs to fill the demand. Forty-nine states have reported shortages in their special education faculty, and the number of alternative programs certifying special education teachers has grown exponentially in the last 20 years (Sayman et al., 2018; Ricci & Zetlin, 2013). The programmatic variety and efficacy of alternative certification programs are as diverse as the novice educators they serve with some being led by university faculty, mentor educators, or nonprofit organizations (Keller et al., 2008; Sayman et al., 2018). Some programs provide opportunities for participants to “demonstrate teaching proficiency across various types of learners and subject matter,” while others only simply need to pass a standardized assessment on instructional pedagogy (Keller et al., 2008). While the need for more special education teachers is known and the interest in alternative certification programs is high, there is no set standard for training and support forcing these novice educators (Sayman et al., 2018). Researchers suggest that beginning special education teachers who participate in an alternative certification program are more likely to remain in education than teachers who are not certified and can become as effective as teachers who entered the field through traditional pathways (Scott et al., 2019).

Although there are no current standards for instructing novice special educators through an alternative certification program, researchers have identified best practices. The alternative certification program should have a clear focus with content that provides a solid pedagogical foundation and practical special education content knowledge (Keller et al., 2008). Educators should have sufficient time to acquire and internalize their new knowledge with researchers suggesting that special education teachers who have completed at least 10 weeks of support were more likely to remain in their roles (Sayman et al., 2018). During professional development, activities should include evidence-based practices that provide real-world application and allows participants to work through challenges they will face in the field (Keller et al., 2008; Veale et al., 2013). Alternative certification participants should be prepared to meet any local or national teacher certification requirements after the completion of their coursework (Scott et al., 2019; Keller et al., 2008). Access to

alternative certification programs should be available to a diverse group of prospective special educators who are committed to doing the work necessary to serve neurodiverse students (Keller et al., 2008). Allowing these novice educators to participate in smaller cohorts will allow them to deepen their knowledge in groups conducive to intense, instructional development (Keller et al. 2008). Offsetting the cost of professional development and incorporating asynchronous content are also recommended (Scott et al., 2019; Keller et al. 2008). As novice educators go through their program, having the support of a mentor or coach has been shown to increase retention of content and provide needed emotional support as challenges arise (Ricci & Ztlin, 2013; Veale et al., 2013; Esposito & Lal, 2005). All of these factors have been found to support the development of novice special educators. Understanding the pedagogical foundation of their profession allows new special educators to have a deeper understanding of the approaches that are needed to support their school communities.

CONCEPTUAL FRAMEWORK

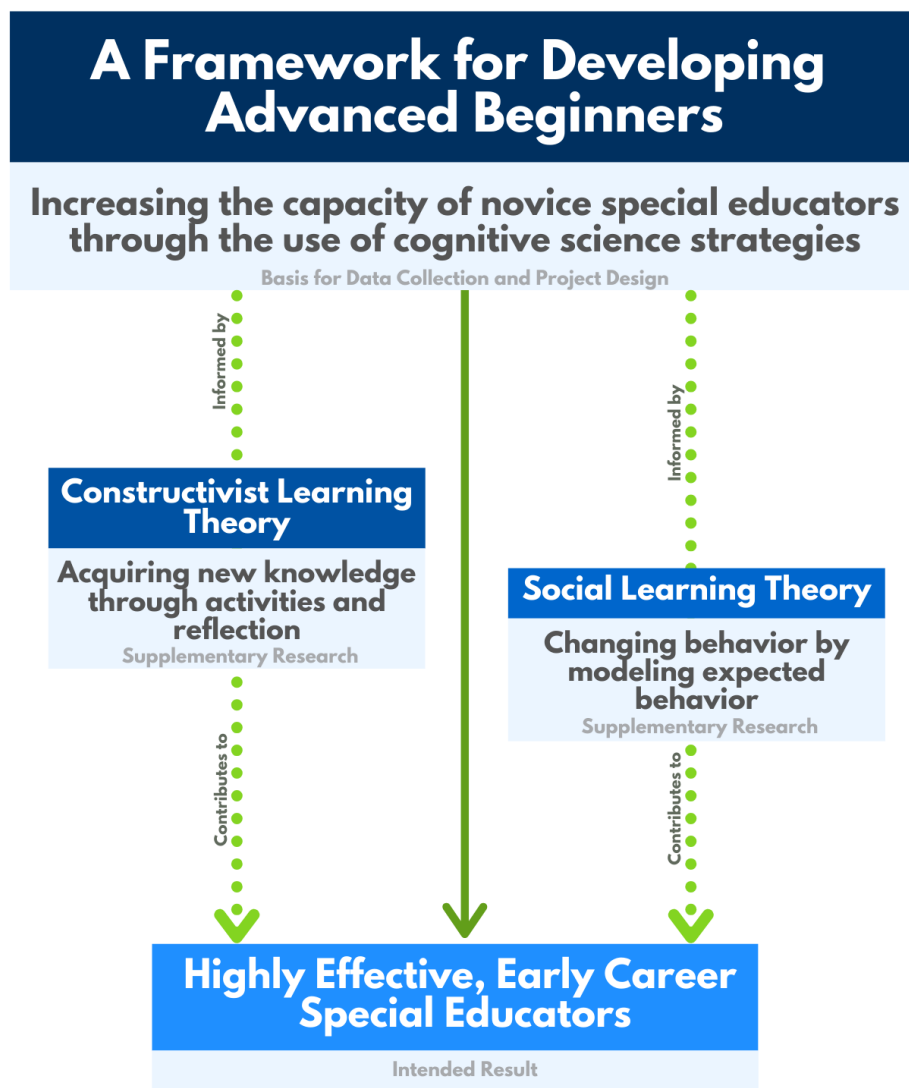
As program staff prepare to analyze the effectiveness of the Fellowship in preparing novice special educators to support neurodiverse students, the identified research will inform best practices to instruct these teachers based on their unique role and connection to their school communities. My inquiry included an examination of existing alternative certification programs, methods to develop novice special educators, and essential skills needed for them to be successful enough to remain in their roles after support has been phased out. The focus of my research was narrowed to ensure a synthesized understanding of how effective alternative special education programs support their participants to ensure there are more qualified special educators in classrooms. This inquiry also yielded recommendations for the Fellowship's continued improvement with participants from various educational backgrounds and school types. A conceptual framework was chosen that incorporates essential concepts from research and considers the needs of participants in special education alternative certification programs.

The conceptual framework used to guide this project incorporates constructivist and social learning theory, as well as an existing framework to effectively support novice special educators within an alternative certification program. Constructivist learning theory asserts that “people construct knowledge from activities and reflections rather than passively absorb information” (Garmston & Wellman, 1994; Chuang, 2021). This aligns with the belief that all teachers need to have real-life experiences in order to deepen their understanding of their role and be able to perform their duties at a high level. Special educators have unique components of their roles that need to be understood beyond what they can learn from reading or hearing about best practices. From understanding how to differentiate instruction to support the continued achievement of neurodiverse students, to effectively documenting support based on national and state requirements, special educators need to master skills that are unique to their role within their school’s community. The ability to guide novice special educators through the learning process with a constructivist approach allows participants to synthesize their learning in order to engage in the problem-solving needed to be successful in their new roles. Social learning theory, popularized by Albert Bandura, is a type of constructivism that asserts that someone learns through “vicarious experiences in a social context,” such as with a role model or by listening to the experience of others (Bandura, 1977; Chuang, 2021). Under this view of social constructivism, the purpose of learning is to change behavior through the modeling of expected behavior (Bandura, 1977; Chuang, 2021). This approach allows learners to demonstrate new skills or behaviors and receive feedback from an expert (Bandura, 1977; Chuang, 2021). Constructivist and social learning theory align to best practices in developing adults and the creation of highly effective teachers.

“A Framework for Developing Advanced Beginners” referenced in A Continuum of Pedagogies for Preparing Teachers to Use High-Leverage Practices (Brownell et al., 2019) will also be incorporated as a way to address the current problem of practice within the Fellowship for Special Education at KIPP DC. This conceptual framework is based on extensive research on evidence-based practices that propel the development of “advanced beginners,” teachers at the beginning of their careers who have some knowledge of instructional content and pedagogy (Brownell et al., 2019). Based on their research, four features (modeling, feedback,

analyzing one’s own performance, and interleaving) “are likely to foster beginning special education teachers’ learning, particularly when these features are combined in varied practice opportunities” (Brownell et al., 2019, p. 340). These features will be used to determine if the Fellowship is effectively supporting their participants through analysis and observations. In addition to the four features at the center of the “Framework for Developing Advanced Beginners,” the quality of practice opportunities (duration, scaffolded practice opportunities, and cohesive practice opportunities) are applied to ensure teachers have meaningful opportunities to internalize and apply the strategies they are learning (Brownell et al., 2019).

Figure 1:
Conceptual Framework



This combination of theory and framework supported the creation of a study design to explore the most effective way to develop educators who are gaining special education certification through an alternative certification program. Pictured in Figure 1: Conceptual Framework, the research used to craft the conceptual framework relied heavily on Brownell et al.'s "Framework for Developing Advance Beginners" (2019). Brownell et al.'s framework provided a basis for the project design and the plan for collecting data and the inclusion of constructivist and social learning theory allowed additional insight into the methods recommended in the framework to be evaluated and measured. The presence of modeling, feedback, analyzing one's own performance, and interleaving as described by Brownell et al. (2019) was used to answer the central research question. Brownell et al.'s framework feature elements of constructivist and social learning theory and its inclusion are reflected in Figure 1. Constructivist Learning Theory and Social Learning Theory are supplementary to Brownell et al.'s framework and contribute to the creation of highly effective special educators. This study sought to understand what the Fellowship may need to do to support educators from a variety of educational backgrounds who have the knowledge and skills needed to become highly effective special educators. The goal of this study is to provide actionable steps that alternative certification programs should take to support educators within similar programs. With this refined evidence-based approach, alternative certification programs might better meet the needs of a diverse force of novice special educators.

STUDY QUESTION

This project will use the following research question to guide the inquiry and assist Fellowship in Special Education program staff:

How does an alternative certification program structure coaching and professional development to support the development of new special education teachers?

STUDY DESIGN

This study applied a modified, sequential explanatory mixed-methods approach to answer the research question. This design was selected to examine the conditions necessary for novice, early career special education teachers to be successful based on practices employed by an alternative certification program. A deeper understanding of these conditions will allow those responsible for the instructional development of special education teachers to use techniques that will directly impact their teacher's success. A sequential explanatory design was selected to allow the data to be collected over time across two consecutive phases (Ivankova et al, 2006). Instead of starting with qualitative data collection and analysis, quantitative data was collected and analyzed first. Then, qualitative data was collected and analyzed to determine trends within each stage of data analysis. To allow for sufficient time to collect qualitative data, this approach was selected to allow for more focus groups and interviews to be completed. Typically, the spring semester of a school year includes additional commitments for educators. Due to the ongoing pandemic and its impact on educators' time, collecting and analyzing quantitative data first allowed for educators to have more time to elect to participate in the study. Each phase of the mixed methods study is built on existing data collected by the Fellowship in order to determine an evidence-based methodology that will provide reliable and valid findings. Employing a mixed-methods approach provided greater flexibility in collecting and analyzing data collected in order to adequately answer the research question at the center of this study.

Quantitative Data Methodology

Since the school year 2019 - 2020, the Fellowship has maintained a database of all surveys given to Fellows. Program staff is seeking to understand the effectiveness of their program and if any modifications are needed to increase retention of knowledge and skills covered during the year-long series of professional development sessions. No extensive data analysis has been conducted in previous school years, but program staff has used anecdotal data collected during the course of the program to note assignments and sessions that should be adjusted. Due to this study's focus of interest, the data gathering and analysis process was designed to

achieve a better understanding of the systems, structures, and participant experiences within the Fellowship.

To better understand how Fellows are responding to instructional demands and knowledge-sharing provided by the program, the Fellowship conducts a mid-year and end of year survey. The mid-year survey is released halfway through the program and asks Fellows to rate their satisfaction with the program, if the program has increased their capacity to support neurodiverse students, and ways the program can improve their instructional delivery. The end of year survey at the conclusion of the program reiterates questions from the mid-year survey and asks Fellows to share feedback on their experience, the support they need to be successful as they further develop their pedagogical understanding and special education knowledge, how the program has impacted their teaching practice and feedback for program staff. All current Fellows are asked to complete both surveys featuring Likert scale and open response questions. Both surveys provide program staff with actionable reflections on the Fellowship experience, Fellows' acquisition of new knowledge and skills, and whether the program has met Fellows' expectations. Understanding the experiences of all Fellows provides more insight on the effectiveness of the Fellowship and whether elements of Brownell et al.'s Framework for Developing Advanced Beginners (2019) are present without speaking to each Fellow directly. The surveys include questions that allow Fellows to reflect on whether the Fellowship is improving their practice through assignments, weekly professional development sessions, group coaching, and individual coaching. The responses provided by Fellows contribute to a deeper understanding of the support Fellows believe they are receiving during the program and whether professional development and coaching within the program were effective. In order to effectively support Fellows, elements of Brownell et al.'s Framework for Developing Advanced Beginners (2019), Constructivist Learning Theory, and Social Learning Theory should be reflected within instructional content and lead to Fellows to the belief that their instructional practice is improving development.

The 2020 - 2021 mid-year survey garnered 56 responses with a 95% response rate (56/59). Using a Likert scale to rate their agreement to selected statements, Fellows were asked to reflect on whether the

Fellowship was improving their practice including their reflections on weekly professional development sessions, assignments, group coaching, and individual coaching. When presented a statement, Fellows were required to select strongly agree, agree, neutral, disagree, or strongly disagree. Fellows were also presented with an optional, open-response section after each statement to provide additional context or reflections. Based on the conceptual framework guiding this study, selected survey questions, as shown in *Appendix C: Fellowship Survey Questions* and Alignment to Conceptual Framework, were evaluated to determine the presence of Brownell et al.'s Framework for Developing Advanced Beginners (2019), Constructivist Learning Theory, and Social Learning Theory through the reflections of Fellows. *Table 1: Fellowship Mid-Year Survey Results* shows the questions selected for further review and the responses from Fellows. When asked to rate their agreement to the statement, *The Fellows program is improving my practice.*, 93% of Fellows selected strongly agree or agree with 61% selecting strongly agree. 7% selected neutral for this statement and no Fellows selected disagree or strongly disagree. These results show that current Fellows are satisfied with the program and the support they have received. When asked to rate their agreement to the statement, *Weekly session content is improving my practice.*, 84% of Fellows selected strongly agree or agree with 46% selecting strongly agree. 14% selected neutral for this statement and 1% Fellows selected disagree. No Fellows selected strongly disagree with this statement. Within the open-response section, some Fellows with special education experience added that the sessions were geared to Fellows without experience and content felt "repetitive". These reflections show that the Fellowship is tailoring instruction to those that need a foundational understanding of the special education process and the presence of constructivist learning theory because Fellows were able to create connections based on previous experiences and activities provided by program staff. When asked to rate their agreement to the statement, *Assignments are improving my practice.*, 91% of Fellows selected strongly agree or agree with 41% selecting strongly agree. 8.9% selected neutral for this statement and no Fellows selected disagree or strongly disagree for this statement. Within the open-response section for reflections on assignments completed during the first half of the program, several Fellows commented that they would like to have multiple format options to complete assignments (i.e. written response, video, or another audio-

visual method) and the need for more written feedback in order to understand the score received and areas that Fellows can focus on to improve their application of skills. As described by Brownell et al. (2019), the quality of practice opportunities within novice teacher development directly impacts early-career special educator’s ability to internalize and apply the strategies they are learning. The perceived lack of these opportunities could have contributed to Fellows’ belief that assignments did not improve their practice. When asked to rate their agreement to the statement, The group coaching has improved my practice., 68% of Fellows selected strongly agree or agree with 29% selecting strongly agree. 25% selected neutral for this statement and 7% Fellows selected disagree. No Fellows selected strongly disagree with this statement. When asked to rate their agreement to the statement, The individual coaching call has improved my practice., 89% of Fellows selected strongly agree or agree with 55% selecting strongly agree. 7% selected neutral for this statement and 4% Fellows selected disagree. No Fellows selected strongly disagree with this statement. Within the open-response section for reflections on group or individual coaching calls, Fellows who disagreed that the practice improved their practice remarked the structure for group coaching calls provided an overview of the material covered during sessions and did not further improve their practice. A lack of interleaving or a structured way for Fellows to analyze their own performance during these calls, as described by Brownell et al.’s “Framework for Developing Advance Beginners” (2019), could have contributed to a belief that calls did not help to improve instructional practices.

Table 1:
Fellowship Mid-Year Survey Results

The Fellows program is improving my practice.										
Subgroup	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree	
All	60.7%	34	32.1%	18	7.1%	4	0.0%	0	0.0%	0

Weekly session content is improving my practice.										
Subgroup	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree	
All	46.4%	26	37.5%	21	14.3%	8	1.8%	1	0.0%	0

Assignments are improving my practice										
Subgroup	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree	
All	50.0%	28	41.1%	23	8.9%	5	0.0%	0	0.0%	0

The group coaching has improved my practice										
Subgroup	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree	
All	28.6%	16	39.3%	22	25.0%	14	7.1%	4	0.0%	0

The individual coaching call has improved my practice										
Subgroup	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree	
All	55.4%	31	33.9%	19	7.1%	4	3.6%	2	0.0%	0

The 2020 - 2021 End of Year Survey garnered 56 responses with a 100% response rate. Three Fellows did not complete the program and the total cohort size was reduced from 59 to 56. Using a Likert scale to rate their agreement to selected statements, Fellows were asked to reflect on whether the Fellowship was improving their practice including their reflections on weekly professional development sessions, assignments, group coaching, and individual coaching. When presented with the statement, Fellows were required to select strongly agree, agree, neutral, disagree, or strongly disagree. Fellows were also presented with an optional, open-response section after each statement to provide additional context or reflections. Based on the conceptual framework guiding this study, selected survey questions were evaluated to determine the presence of Brownell et al.'s Framework for Developing Advanced Beginners (2019), Constructivist Learning Theory, and Social Learning Theory through the reflections of Fellows. *Table 2: Fellowship End of Year Survey Results* shows the questions selected for further review and the responses from Fellows. When asked to rate their agreement to the statement, *The Fellows program is improving my practice.*, 96% of Fellows selected strongly agree or agree with 68% selecting strongly agree. 4% selected neutral for this statement and no Fellows selected disagree or strongly disagree. These results show an increase from the Mid-Year Survey results with fewer Fellows selecting neutral and more Fellows selecting strongly agree or agree. When asked to rate their agreement to the statement, *Weekly session content is improving my practice.*, 97% of Fellows selected strongly agree or agree with 66% selecting

neutral and more Fellows selecting strongly agree or agree. When asked to rate their agreement to the statement, *Weekly session content is improving my practice.*, 97% of Fellows selected strongly agree or agree with 66% selecting strongly agree. 4% selected neutral for this statement and no Fellows selected disagree. This shows a 12% increase in Fellows selecting strongly agree or agree compared to Mid-Year Survey results in Fellows. When asked to rate their agreement to the statement *Assignments are improving my practice*, 95% of Fellows selected strongly agree or agree with 41% selecting strongly agree. 5% selected neutral for this statement and no Fellows selected disagree or strongly disagree for this statement. When asked to rate their agreement to the statement, *The group coaching has improved my practice.*, 68% of Fellows selected strongly agree or agree with 20% selecting strongly agree. 25% selected neutral for this statement and 7% Fellows selected disagree. No Fellows selected strongly disagree for this statement. More Fellows selected agree than strongly agree with the statement compared to mid-year survey results and could be attributed to a need for differentiated support in order for group coaching calls to effectively support Fellows. When asked to rate their agreement to the statement, *The individual coaching call has improved my practice.*, 93% of Fellows selected strongly agree or agree with 50% selecting strongly agree. 4% selected neutral for this statement and 4% Fellows selected disagree. No Fellows selected strongly disagree with this statement. These results show an increase in Fellows selecting agree for this statement and less selecting neutral or disagree. Within the open-response section for reflections on group or individual coaching calls, Fellows commented that individual coaching calls were more effective than group coaching calls because group coaching calls were tailored to the “KIPP way of doing things” while individual calls allowed them to adjust the conversation to meet their needs. Some Fellows believed that coaching was not as impactful when they were part of other coaching programs provided by their schools.

Table 2:
Fellowship End of Year Survey Results

The Fellows program has improved my practice.										
Subgroup	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree	
All	38	67.86%	16	28.57%	2	3.57%	0	0.00%	0	0.00%

Weekly session content has improved my practice										
Subgroup	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree	
All	37	66.07%	17	30.36%	2	3.57%	0	0.00%	0	0.00%

Assignments have improved my practice.										
Subgroup	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree	
All	23	41.07%	30	53.57%	3	5.36%	0	0.00%	0	0.00%

Group coaching sessions have improved my practice										
Subgroup	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree	
All	11	19.64%	27	48.21%	14	25.00%	4	7.14%	0	0.00%

Individual coaching calls have improved my practice										
Subgroup	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree	
All	28	50.00%	24	42.86%	2	3.57%	2	3.57%	0	0.00%

Data Collection

Qualitative interview data were collected and stored using Zoom’s audio transcript feature and stored within Zoom’s secure platform until it was analyzed. Once analyzed, all audio transcripts were stored in Box Secure Cloud-Based Computing and Data Storage Services provided by Vanderbilt University and approved by VUMC. Quantitative data was obtained from the Fellowship and uploaded to a password-protected folder within Box. All analysis of quantitative data was stored in a separate folder within Box.

Study Participants

This study utilized research participants that have intimate knowledge of the Fellowship’s alternative certification program as learners and instructors. Fellows who participated in the Fellowship from the school year 2019 - 2021 were broken up into two groups: former and current Fellows. All participants enrolled in the Fellowship during the school year 2020 - 2021 were designated as “current Fellows”. The Director of the Fellowship and the instructor were part of the study and designated as “program staff”. An equal balance of current and former Fellows was invited to participate in the study to get a better understanding of the impact of changes made to the Fellowship’s structure and the perceptions of Fellows. Since the Fellowship’s inception, the structure of the program has changed from small cohort sizes and only accepting applicants

employed by one of KIPP DC's network of schools to a program open to educators from any D.C. public school with steadily increasing cohort sizes. These changes directly impact the experience of Fellows and program staff's ability to provide support to an increasingly diverse cohort of participants. Basic demographic information of participants was provided by the organization to better understand the makeup of gender, cultural background, and school affiliation of participants. With the purpose of trying to achieve a representative sample that reflects the diversity of participants, Fellows were selected to participate and ensure a diversity of experiences and backgrounds. Purposive sampling was used to create the intended representative sample and ensure a variety of reflections were obtained through interviews and focus groups (Babbie, 2017). Fellows selected to participate in the study were chosen by the researcher after receiving a list of all Fellows who participated in the Fellowship since 2019. All Fellows selected to participate in the survey received an email describing the purpose of the study, whether they were being asked to participate in an interview or focus group, and the time commitment for their participation. Fellows received a maximum of 3 emails requesting their participation before removing them from further contact. Fellows who responded and agreed to participate in an interview were provided flexibility in scheduling based on their availability. Fellows who responded and agreed to participate in a focus group were provided at least 4 options and the time that received the most affirmative responses were selected for the group. A list of Fellows participating in the study is available in *Appendix A: Fellows Participating in Study*.

Quantitative Data Methodology

To determine the effectiveness of the Fellowship against the conceptual framework, speaking directly to former and current Fellows was essential. All Fellows selected to participate in the survey received an email describing the purpose of the study, whether they were being asked to participate in an interview or focus group, and the time commitment for their participation. All prospective interview and focus group participants received an email that provided a brief explanation of the research study, a request for them to participate in either a virtual interview for 35 - 45 minutes or a virtual focus group 45 - 60 minutes and a request to respond to the email if they were interested. After the initial

email request to participate, current and former Fellows were emailed two other times to request their participation before removing them from the contact list. Fellows received a maximum of three emails requesting their participation before removing them from further contact. Prospective participants were informed that they would not be compensated for their time and this may have limited the number of participants. Fellows who responded and agreed to participate in an interview were provided flexibility in scheduling based on their availability. Fellows who responded and agreed to participate in a focus group were provided at least four options and the time that received the most affirmative responses were selected for the group. Stratified, probability volunteer sampling was used to recruit Fellows to participate in structured qualitative interviews and focus groups. Using demographic information provided by the Fellowship, prospective interview and focus group participants were selected to ensure there was a balance of current and former Fellows, cultural identity (i.e. gender and ethnicity), and school affiliation. After these groupings were made, prospective participants were randomly selected as an interview or a focus group participant within the current or former Fellow groups. Prospective participants were informed that their participation was voluntary and their agreement to participate or declining to participate would not impact their relationship with the Fellowship.

The Fellowship scheduled the distribution of the mid-year survey from January of 2021 and the end-of-year survey for June of 2021. Qualitative interviews and focus groups were scheduled from February 2021 to May 2021 using Zoom, a virtual meeting platform, to maintain safety precautions during the COVID-19 pandemic.

Due to the study being conducted during the lingering COVID-19 pandemic, the number of Fellows who were willing to participate in interviews and focus groups may have been impacted. All current and former Fellows were general education or special education teachers or leaders and an additional, voluntary request for their time may have been beyond their capacity. Conducting interviews and focus groups during a busy time of year for all educators may also have contributed to the number of unresponsive prospective participants. Three prospective focus group participants confirmed their participation and then did not show up to their scheduled session time.

Both factors resulted in completing fewer interviews with Former Fellows and fewer participants in both Current and Former Fellows focus groups than originally planned. Due to these factors, I conducted two interviews with Former Fellows and one focus group with two participants. To obtain the perspective of Current Fellows, I conducted four interviews and one focus group with four participants.

Questions created for the structured qualitative interviews were influenced by elements of the conceptual framework and the literature review. The survey methods incorporated concepts from constructivist learning theory, social learning theory, and “A Framework for Developing Advanced Beginners” referenced in A Continuum of Pedagogies for Preparing Teachers to Use High-Leverage Practices (Brownell et al., 2019) to determine if the Fellowship utilized practices shown to effectively support novice special educators in an alternative certification program. Fellows were asked:

Modeling

- How are new practices modeled during professional development?
- How often are teaching strategies or special education content accompanied by a model?

Feedback

- How are you provided feedback on the strategies and content knowledge you are learning/have learned?
- How often do you receive feedback on your performance within the program?

Analyzing One’s Own Performance

- How does the Fellowship teach you how to analyze your own performance?
- What methods does the Fellowship use to help you analyze your performance and acquisition of new skills?

Interleaving

- What does practice look like during professional development sessions when you are learning multiple skills?
- How does the Fellowship combine practicing 2 or more related skills during professional development sessions?

During interviews and focus groups, Fellows voluntarily mentioned whether they previously had special education teaching experience prior to their participation in the Fellowship, but it was not a planned question. A copy of the full interview protocol is available in *Appendix A: Interview and Focus Group Protocol*.

To ensure the research study complied with best practices when working with human subjects, the proposed sequential explanatory mixed-methods study was submitted to Vanderbilt University's Institutional Review Board (IRB) as a quality improvement project. IRB approval for the qualitative study was granted on August 17, 2020.

Data Analysis

After a thorough review of the mid-year and end of year survey results provided by the Fellowship, structured qualitative interviews, and focus groups, informed by the study's conceptual framework, data analysis was conducted to better understand how the Fellowship supports the development of new special education teachers. The structured interviews and focus groups were conducted with pre-determined, open-ended questions aligned to Brownell et al.'s "A Framework for Developing Advanced Beginners" (2019) to determine the presence of its elements within the Fellowship. This research method was employed to ensure a balanced view of the Fellowship's effectiveness through analysis of survey results and the reflections of participants, staff, and alignment to evidence-based practices.

Delve Online software was selected and used to code the data from qualitative interviews. Delve allowed me to upload all transcripts from interviews and focus groups to their secure server, create codes, highlight to indicate a selection of text to attach a code, and view all excerpts from highlighted sections under the code(s) selected. The interviews and focus group provided an opportunity to compare the reflections of current and former Fellows alongside survey data provided by the Fellowship to make connections and analyze the effectiveness of the program.

To complete the coding process, interviews and focus groups were transcribed using a feature within Zoom and reviewed for accuracy by watching a recording of each session. After reading each transcript again, initial trends were noted and compared against a set of deductive codes

To complete the coding process, interviews and focus groups were transcribed using a feature within Zoom and reviewed for accuracy by watching a recording of each session. After reading each transcript again, initial trends were noted and compared against a set of deductive codes created based on the study’s conceptual framework, shown in Figure 1, within the initial open coding process. Deductive codes used were linked to key phrases from the conceptual framework which included constructivist learning theory, social learning theory, and “A Framework for Developing Advanced Beginners.” As each transcript was reviewed, inductive codes were created to capture commonalities amongst participants. Deductive and inductive codes are listed in Table 3: Qualitative Coding Thematic Analysis. Relevant excerpts were saved using Delve’s software for further review. These excerpts were reviewed and used to analyze the Fellowship experience, as well as, answers to the study question. Trends were identified and reviewed for relevancy and alignment to the study question. They were captured and are discussed within key findings

Table 3:
Qualitative Coding Thematic Analysis

Deductive Codes		Inductive Codes	
D-1	Modeling	I-1	Collaboration
D-2	Feedback	I-2	General Education
D-3	Analyzing One’s Own Performance	I-3	KIPP
D-4	Interleaving	I-4	Motivation
		I-5	Observations
		I-6	Practicing New Skills
		I-7	Reflection
		I-8	Remote Learning
		I-9	Suggestions

Deductive and inductive codes were then organized into categories (axial codes), shown in *Table 4: Coding Categorization*, to create connections between codes and their relevance to the study question and conceptual framework. Using software within Delve, patterns within phrases across focus group and interview participants. The categories created were:

- Fellowship Strengths
- Suggested Fellowship Improvements
- Considerations Impacting the Fellowship Experience

Table 4:
Coding Categorization

Open Codes	Axial Codes	Theme
Modeling	Fellowship Strengths	Recommendations to support the effectiveness of the Fellowship and the acquisition of new knowledge and skills
Feedback	Modeling	
Analyzing One’s Own Performance	Feedback	
Interleaving	KIPP	
Collaboration	Practicing New Skills	
General Education	Suggested Fellowship Improvements	
KIPP	Analyzing One’s Own Performance	
Motivation	Interleaving	
Observations	Collaboration	
Practicing New Skills	Observations	
Reflection	Considerations Impacting the Fellowship Experience	
Remote Learning	Motivation	
Suggestions	Reflection	
	General Education	
	Remote Learning	

Deductive and inductive codes fell under the overall theme of recommendations to support the effectiveness of the Fellowship and the acquisition of new knowledge and skills. Within this theme, trends emerged across current and former Fellows experiences. Commonalities were reviewed and helped to create findings aligned to the conceptual framework and review of the research. These findings were compared to the quantitative analysis and are discussed in the finding section.

KEY FINDINGS

The findings of this study were aligned with the literature reviewed and helped to answer how the Fellowship can effectively support early career special education teachers. Below are key findings after a thorough analysis of the quantitative and qualitative data collected.

Study Question:

How does an alternative certification program structure coaching and professional development to support the development of new special education teachers?

Finding 1:

Former Fellows remarked that they needed more support during and after the program to successfully implement strategies learned.

During interviews, former Fellows from both the 2019 and 2020 cohorts remarked that modeling and feedback were present during their sessions, and the information provided deepened their understanding of special education content, but the pace of the coursework did not allow them to dig deeper into instructional strategies that would have supported their ability to work with students with various learning needs. They mentioned that spending more time practicing, receiving feedback, and adjusting their instructional practice in their classrooms based on guidance from program staff would have allowed them to better apply the strategies they were learning during sessions. Former Fellows' request for this type of support aligns to the tenets of constructivist learning theory and social learning theory where new learning is constructed through social experiences and collaboration with program staff. Once they concluded the Fellowship and continued their support of students with special education services, former Fellows noticed gaps in their instructional delivery and ability to support students with more severe academic needs. In the focus group for former Fellows, both Fellows who

completed the program in 2019 mentioned that having a mentorship program after the initial Fellowship year would have “made it easier to internalize what they learned and apply it to their students.” Survey results show that the majority of current Fellows believe the program improved their practice, End of Year Survey results show that 96% of current Fellows believe the Fellowship has improved their practice, but had mixed reactions to the effectiveness of coaching calls on their instructional practice. Former Fellows may have a keener sense of the support that should be provided to increase instructional effectiveness since they completed the program and have been tasked with using what they learned to teach neurodiverse students. Former Fellows suggested receiving more support after the Fellowship year would have supported their ability to support academically and behaviorally diverse classroom communities.

When current Fellows reflected on their experience, they remarked that the support received from program staff met their expectations, and they were adequately supported through coursework. Based on survey results, 96% of current Fellows believed the program improved their practice including weekly professional development sessions. Current Fellows mentioned that the program staff regularly provided opportunities for them to reflect on what they learned, and they had opportunities to discuss special education content and instructional strategies. These instructional strategies are consistent with elements of Brownell et al.’s Framework for Developing Advanced Beginners (2019) and a current Fellow stated, “Overall the program has made me more thoughtful about my approach to instruction. It gave me a new motivation for the school year providing me new ideas to implement in my room.” Overall, current Fellows rated their experience favorably, according to the quantitative data collected, and believed the Fellowship was positively impacting their ability to understand and support students receiving special education services. Current Fellows mentioned during interviews that the knowledge and skills they were learning could be used within their classrooms but remarked that the program did not adapt to the skills needed to be successful in the virtual classroom most teachers were supporting. On the end of year survey, a Fellow mentioned, “Given that I was not a special education teacher and was not inside the building to put the work to practice, there were times that I did not feel like I had enough

to offer to the program , as far as collaboration was concerned.” Current Fellows may have a more favorable view of the Fellowship since they were actively supported by program staff compared to former Fellows who used hindsight and past reflections to provide insight.

Finding 2:

Current and Former Fellows with prior special education teaching experience believed the program effectively supported their ability to provide high-quality instruction to neurodiverse students.

When interviewing both Current and Former Fellows, those with previous special education teaching experience commented that the Fellowship was a complement to their existing learning, helped to fill gaps in their understanding, and supported their ability to be more effective in their classrooms. According to the End of Year survey results, a current Fellow commented, “The Fellows program and all of its components have been very helpful to improving my practice. Even as a teacher who is currently teaching Special Education this program has taught me to look at my work as a practice. It has offered many strategies for success and the Fellowship among colleagues is the main thing that kept me sane and focused during the pandemic.” During interviews and focus groups, both current and former Fellows mentioned that the beginning of the Fellowship provided a solid understanding of special education law and content knowledge that allowed them to better understand the special education process and why certain practices are conducive to a compliant special education program. Fellows with special education experience remarked that learning the best practices when creating and writing Individualized Education Programs (IEPs) directly impacted their ability to understand how to implement specialized services and when changes need to be made to better support students. Current Fellows remarked that the ability to collaborate and learn from the experiences of other Fellows had a direct impact on their understanding of course content. The integration of social learning theory and constructivist learning theory is evident in these reflections from Fellows. The instructional strategies provided during the middle to end of the Fellowship allowed them to better understand how to support students with a variety of learning

differences and provided them an opportunity to implement new practices with their students. During the End of Year survey, a Fellow mentioned, “I think assignment 4 and 5 approached the balance between providing a strict, structured rubric and allowing fellows the freedom and flexibility to demonstrate mastery using a method they found more suitable. I think future assignments should use the same grading practices.”

Fellows without special education teaching experience remarked that it was a steep learning curve within the Fellowship that made it challenging to actively engage in coursework. At the beginning of the Fellowship, these Fellows felt that they had to quickly learn and understand special education terminology in order to participate in sessions and build their knowledge of an unfamiliar process. A Fellow remarked, “I would not change the assignment but I would provide more opportunities for fellows to collaborate within (their) grade band. It was easier for me to get an understanding of what to do or how to write when I was speaking with colleagues.” This shows Fellows would have benefited from more opportunities to share their learning through the completion of required program assignments as described in Social Learning Theory. They believed that the coursework they were engaged in was essential to building their special education content knowledge, but they remarked that additional support from program staff was needed for them to complete required assignments. When coursework moved towards instructional strategies, they remarked the coursework was easier to grasp and implement with their students. The reflections of Fellows show that interleaving concepts, as described in Brownell et al.’s “Framework for Developing Advanced Beginners” (2019), was not readily apparent while the modeling program staff provided was mentioned by all Fellows participating in interviews or focus groups. During interviews and focus groups, Fellows remarked they struggled when asked to practice multiple skills on assignments and needed additional support from program staff to successfully complete all components.

Finding 3:

Current and Former Fellows believed time to collaborate and reflect on their instructional practices with members of their cohort directly impacted their success within the program.

Both current and former Fellows remarked during interviews and focus groups that the time they spent collaborating and reflecting with members of their cohort helped them better understand the concepts covered during sessions and incorporate them in their classrooms. All Fellows interviewed shared specific examples of intentional time spent meeting in small groups with other members of their cohort and feeling more comfortable sharing their questions and challenges in these spaces. Regardless of previous teaching experience or school affiliation, having time during each Wednesday to connect with other Fellows helped them gain a deeper appreciation for the special education content and instructional practices being taught. Learning from others in order to acquire new knowledge and skills is a component of Constructivist Learning Theory and is present according to the reflections of Fellows during interviews and focus groups. Time learning and collaborating with other Fellows was often spent discussing the concepts of focus, sharing ways these elements are present, or not, within their school communities, and asking clarifying questions.

Opportunities to meet with other Fellows, discuss course content, and reflect on changes in their instructional practice helped to break up professional development sessions with more time to analyze concepts. One current Fellow mentioned, “Most of my learning came from collaboration with peers/ colleagues from real-world experiences.” Former Fellows remarked that professional development sessions that featured more lecture-style instruction made it more challenging for them to engage in the content and fully understand the concepts covered. When former Fellows had an opportunity to discuss their perspectives with other members of their cohort, they were able to consider the real-world implications of implementing new practices and any perceived obstacles they may encounter. Current Fellows mentioned that they have multiple times to meet in small groups during each session and they rely on this opportunity to engage with other educators across levels of experience

and background. This element reflects Social Learning Theory and the ability to learn through vicarious experiences within social situations. One Fellow remarked, “As far as coaching, I literally was able to put into action several ideas given by program staff and my peers. I am really big on collaboration so it was super helpful to be able to not only talk through and troubleshoot, but to do it with people kind of on the outside looking in.” Opportunities to collaborate with Fellows and program staff allowed Fellows to deepen their understanding of course content and create new connections to the work of a special educator which is consistent with Constructivist Learning Theory.

RECOMMENDATIONS

Recommendation 1:

The Fellowship should incorporate elements of interleaving and reflection on one’s own performance to increase the retention of knowledge and skills.

Based on the responses of program staff, Fellows are not explicitly taught how to analyze their own performance or recognize when they are learning multiple, related skills that will improve their performance (interleaving). Brownell et al.’s “A Framework for Developing Advanced Beginners” (2019) asserts that analyzing one’s own performance and interleaving skills are essential to supporting the expanding skill set of novice special educators and retention of high-leverage practices that support neurodiverse students. The ability to analyze one’s own performance is a skill that all educators need to develop to effectively adjust their approach in order to better support their students (Brownell et al., 2019). The Fellowship has a unique opportunity to embed the development of this skill within the structure of their program that can be leveraged to increase the capacity of Fellows as they improve their instructional delivery. While the vast majority of current Fellows believed the program improved their instructional practice, they had mixed reactions to the assignments presented and their ability to support their

ability to support their ability to acquire new knowledge and skills. Understanding when and how multiple related skills build on existing learning as Fellows practice new skills, or interleaving, will ensure that Fellows understand how to implement more complex strategies using their prior experience to support the deepening of their knowledge base. Knowing when interleaving is occurring during course content will also allow Fellows to understand how strategic scaffolding can be used within their classroom communities.

In order to support the use of effective self-analysis and interleaving, the Fellowship should plan for the inclusion of these approaches and monitor their impact on Fellows. As the scope and sequence of sessions are planned and lesson plans are created by program staff, they should ensure elements of analyzing one's own performance and interleaving are featured during each session and are consistently implemented as the modeling and feedback currently provided. This will allow program staff to incorporate strategies that are proven to support novice special educators while differentiating instruction to support Fellows with diverse teaching experiences. Adding questions to the mid-year survey to gauge Fellows' ability to analyze their own performance will allow program staff to understand if course content has been internalized by Fellows, what elements of instruction should be revisited, and any Fellows who may need more support to successfully integrate high-leverage practices with their students. When practicing skills, program staff should allow Fellows to reflect on the connections between new and old learning, as well as, their relation to becoming a highly effective special educator and lean into strategies aligned to Constructivist Learning Theory and Social Learning Theory, such as creating role-play activities and opportunities to reflect on new skills and experiences. This modification to the instructional delivery of program staff will allow Fellows to deepen their understanding of the content covered, regardless of their prior special education teaching experience. With this adjustment, all Fellows will have an opportunity to analyze their own performance against practices of highly effective special education teachers and determine the support they need to adjust the support they provide to their learning communities.

Recommendation 2:

The Fellowship should provide differentiated sessions for Fellows with and without special education experience to tailor learning to meet Fellows instructional needs.

The Fellowship has opened its enrollment to include educators with a variety of roles within their school communities and special education experience which has led to the need for differentiated support. Of the Fellows who participated in interviews and focus groups, 45% were not in a special education role at the time of their enrollment in the Fellowship and had limited training on high-leverage special education practices. All of these Fellows remarked that the initial focus on special education law, disability categories, and foundational special education content knowledge was essential but initially challenging to internalize since they had limited, prior understanding. They all remarked that having more time to dig into this content knowledge would have supported their ability to engage in professional development sessions, especially if they had an opportunity to ask questions within a group of peers who also had limited special education experience. Some Fellows remarked that they felt ill-equipped to contribute to group discussion.

In contrast, Fellows with special education experience felt some content did not align to their instructional needs with a Fellow commenting, “Some topics are repetitive or already known.” Fellows with some special education experience felt that course content shifted from feeling redundant to helping to refine their understanding of best practices based on their prior special experience. By creating differentiated sessions for Fellows, program staff can tailor instruction to meet the needs of all Fellows and increase their ability to understand and use practices that will support diverse student populations. According to survey results, eight Fellows suggested having differentiated sessions based on prior special education experience. Three Fellows suggested incorporating opportunities for Fellows to collaborate within their grade band (i.e., early childhood, elementary, middle school, and high school). Creating smaller groups within the larger cohort can help facilitate the collaboration and discussion

necessary to incorporate Constructivist Learning Theory and Social Learning Theory elements and propel the growth of early career special education teachers (Bandura, 1977; Garmston & Wellman, 1994; Chuang, 2021). Those with more experience will have an opportunity to deepen their ability to analyze their own performance, as described by Brownell et al.'s "Framework for Developing Advance Beginners" (2019), and change their behavior through the acquisition of new knowledge and skills.

To differentiate support for Fellows, program staff can create separate sessions for Fellows based on their prior special education experience, current role within their school communities, and/or grade band. Fellows without special education experience could start the Fellowship earlier to incorporate more time to learn about the special education process and foundational special education content knowledge. During professional development sessions, content can be created to support Fellows with limited understanding of special education and they can meet in a separate group to allow program staff to provide more reflection, practice, and application of new skills and for Fellows to feel comfortable asking questions during the learning process. Fellows with special education experience will be able to deepen their understanding of best practices by receiving instruction that meets their needs from the beginning. Heterogeneous groups can be incorporated to ensure Fellows from all instructional backgrounds can learn from each other and deepen their understanding of course content. As the Fellowship continues to expand and is open to all educators interested in obtaining a special education certification, the likelihood that the program will serve participants with a variety of teaching experiences is high and the use of differentiated groups will allow Fellows to increase their capacity and indicate satisfaction with the support provided.

DISCUSSION AND CONCLUSION

While this study does not include a longitudinal study of the effectiveness of the Fellowship, one should be considered to determine the ability of the Fellowship to support the development of novice special educators. Special education teacher vacancies are impacting the quality

of support neurodiverse students receive within their school communities. This capstone project was created to address the following problem of practice: How can an expanding special education alternative program support the needs of diverse, novice special educators. A central research question was developed to develop a project design that would expand the capacity of the Fellowship and the fellows they support. After a thorough review of the findings, structural shifts to the Fellowship's program design lead to long-lasting satisfaction from participants based on their increased capacity to support neurodiverse students. By adjusting the delivery of course content and creating multiple tracks based on prior special education teaching experience, the Fellowship will be able to achieve its goal of increasing the number of highly effective special educations in classrooms across the District of Columbia.

This study incorporated quantitative and qualitative data to determine the satisfaction of current and former Fellows and the ability of program staff to use evidence-based practices that have been proven to support the development of novice special educators. This study incorporates recommendations for the Fellowship's continued improvement as their program continues to expand. Other alternative certification programs supporting the development of novice special education teachers can replicate this study to add to the existing literature on this area of interest.

Limitations

This study has several limitations that mainly impact its validity. The ongoing COVID-19 pandemic changed the study design and significantly altered the delivery of the Fellowship's instruction as it shifted to virtual learning when the program is typically held in person. The COVID-19 pandemic also made it unsafe to interact with program staff and Fellows in person and hold all interviews and focus groups through Zoom. The ongoing impact of the pandemic may have impacted the willingness for Fellows to participate in the study and reduced the number of Fellows who responded to a request to participate. Analyzing the documents that are provided to Fellows and are used to guide them through coursework can help to illuminate a richer understanding of the support provided to Fellows and potentially lead to additional recommendations.

Conclusion

This capstone study sought to understand how an alternative certification for novice special educators. The findings of this study help to increase the Fellowship's capacity to support these special education teachers and for similar programs to further enhance their ability to address the critical need for special educators across the country. All programs supporting this population of educators can evaluate their use of high leverage instructional practices against evidence-based approaches needed to create change in novice educators' ability to support neurodiverse students.

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APPENDICES

Appendix A: Fellows Participating in Study

Fellow	Fellowship Year	Internal or External Participant	Race	Gender	Years of Experience	Previous Special Education Teaching Experience
CA	20 - 21	External	White	Female	>2 years	No
JO	20 - 21	Internal	White	Male	>2 years	No
TE	20 - 21	Internal	Black	Male	>2 years	No
AQ	20 - 21	External	Black	Female	>2 years	No
KR	20 - 21	External	Black	Female	8 years	Yes
CH	20 - 21	Internal	Black	Male	>2 years	No
RA	20 - 21	Internal	Black	Female	5 years	No
AL	19 - 20	Internal	Black	Male	5 years	No
LA	18 - 19	Internal	Black	Female	10 years	No
TI	18 - 19	Internal	Black	Female	7 years	Yes

Appendix B: Interview and Focus Group Protocol

Introduction

Hi, my name is Chalon Jones and I am a doctoral student at Vanderbilt University. Thank you for agreeing to participate in a conversation about your experience with the Fellowship in Special Education. I am researching the practices the Fellowship uses to support participants and its alignment to evidence-based practices. I appreciate any insight you are willing to provide about your experience with the Fellowship. All of your responses will be kept confidential and will not impact your relationship with the Fellowship. If you are asked a question that you believe is unclear, feel free to ask me to clarify. If you are asked a question that you are unable to answer, please let me know.

During our conversation, I will ask you a series of questions about practices that may or may not be present during professional development sessions and instructional coaching meetings based on the Fellowship's use of modeling, feedback, analyzing your own performance, and interleaving or practicing multiple related skills.

Questions for Interviews and Focus Groups

Modeling

- How are new practices modeled during professional development?
- How often are teaching strategies or special education content accompanied by a model?
- What is the frequency and duration modeling that occurs within professional development sessions?
- How often are you provided an opportunity to engage in practice after a model is presented?
- What do practice opportunities look like after modeling is provided?
- Do you believe the modeling presented improved your acquisition of new knowledge of skills? Why or why not?

Feedback

- How are you provided feedback on the strategies and content knowledge you are learning/ have learned?
- How often do you receive feedback on your performance within the program?
- What different types of feedback do you receive?
- How was feedback provided before, after, or during practice opportunities?
- Do you believe the feedback you have received has improved your acquisition of new knowledge of skills? Why or why not?

Analyzing One's Own Performance

- How does the Fellowship teach you how to analyze your own performance?
- What methods does the Fellowship use to help you analyze your performance and acquisition of new skills?
- Are the methods used to help you analyze your performance effectively in your acquisition of new skills? Why or why not?
- How often are you provided an opportunity to analyze your performance?
- What does it look like for you to analyze your performance in professional development or instructional coaching sessions?

Interleaving

- What does practice look like during professional development sessions when you are learning multiple skills?
- How does the Fellowship combine practicing 2 or more related skills during professional development sessions?
- How often are you able to practice multiple related skills that you are learning?
- What support does the Fellowship provide when you are learning multiple skills during sessions?

Appendix C: Fellowship Survey Questions and Alignment to Conceptual Framework

Survey Question	Alignment to Framework Component
The Fellows program is improving my practice.	<ul style="list-style-type: none"> ● Brownell et al. <ul style="list-style-type: none"> ○ Modeling ○ Feedback ○ Analyzing One's Own Performance ○ Interleaving ● Constructivist Learning Theory ● Social Learning Theory
Weekly session content is improving my practice.	<ul style="list-style-type: none"> ● Brownell et al. <ul style="list-style-type: none"> ○ Modeling ○ Feedback ○ Interleaving ● Constructivist Learning Theory ● Social Learning Theory
Assignments are improving my practice.	<ul style="list-style-type: none"> ● Brownell et al. <ul style="list-style-type: none"> ○ Analyzing One's Own Performance ○ Interleaving
The group coaching has improved my practice.	<ul style="list-style-type: none"> ● Brownell et al. <ul style="list-style-type: none"> ○ Modeling ○ Feedback ● Constructivist Learning Theory ● Social Learning Theory
The individual coaching call has improved my practice.	<ul style="list-style-type: none"> ● Brownell et al. <ul style="list-style-type: none"> ○ Modeling ○ Feedback ○ Analyzing One's Own Performance