Learning in Practice: Fifty Years of Advancing Clinical Preparation

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ABSTRACT

High-quality clinical preparation is essential for developing effective special educators who can improve outcomes for students with disabilities. This article traces the evolution of clinical preparation over the past 50 years, from categorical field-based experiences to contemporary practice-based models that emphasize deliberate practice, coaching, and authentic application of instructional skills. We examine key historical milestones, the influence of policy and workforce demands, and research supporting innovations such as video analysis, simulation, structured tutoring, and performance feedback. The article concludes with recommendations for strengthening school-university partnerships and expanding technology-enabled, practice-based learning opportunities to prepare and sustain the next generation of special education professionals.

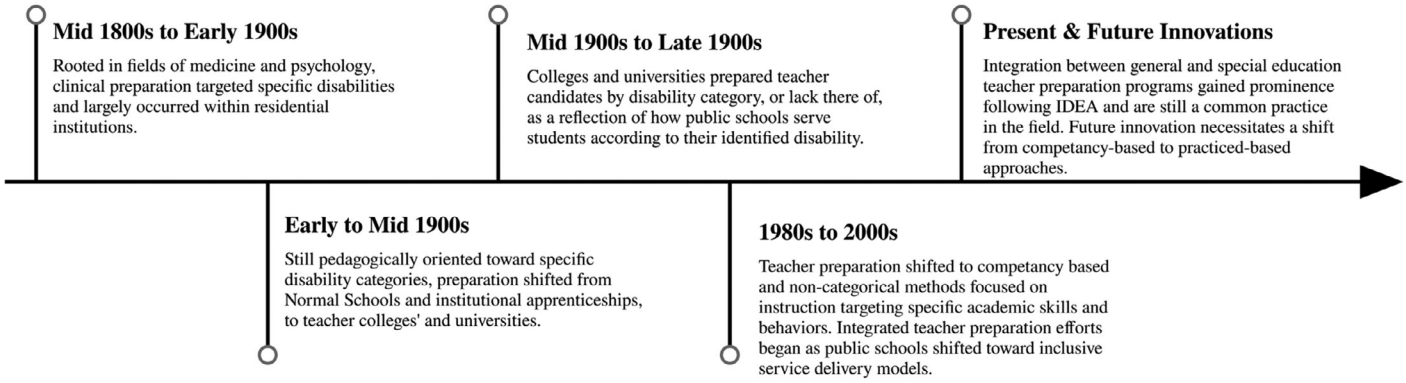
KEYWORDS

Clinical preparation, field experiences, practice-based learning, special education, teacher education

As the field of special education celebrates the 50th anniversary of the Individuals with Disabilities Education Act (IDEA), it is important to acknowledge the critical role special educators play in providing students with disabilities with effective, equitable educational opportunities. Developing a well-prepared, effective special education teacher workforce does not happen by chance; rather, it results when teacher candidates are provided opportunities to develop their expertise over time, with multiple opportunities to practice coupled with expert feedback (Brownell et al., 2019; Ericsson, 2014).

Clinical preparation, or "the application of academic knowledge to practice in classrooms, schools, and communities where candidates learn to contextualize the curriculum, learning experiences, and other teaching practices for specific individuals and groups of students" (Hollins & Warner, 2021, p. 2), has long been considered a cornerstone of effective educator preparation for both students with and without disabilities (O'Brien et al., 2024). Over time, clinical preparation has been described by different terms and provided in different formats (e.g., field experiences, practicum placements, student teaching, teacher residencies, apprenticeships). Aligned with Ericsson's (2014) and Brownell and colleagues (2010) assertions, well-designed, high-quality clinical preparation should allow teacher candidates to apply their developing knowledge in practice over an extended period of time under the supervision of a mentor or supervisor who provides ongoing feedback. Although clinical preparation has long been considered important to the development of special education teachers, it has changed considerably throughout history. This article presents (a) the history of special educator preparation and its role in shaping the characteristics of clinical preparation, (b) contemporary approaches to improving candidates' opportunities to practice, including field placements, that are research-based and have proven effective, (c) implications for enacting these approaches in practice and continued research about them, and (d) our aspirational vision for improving teacher candidates' practice-based learning opportunities as the field of special education enters its next 50 years.

FIGURE 1: History of Teacher Preparation for Special Education



Historical Perspective and Foundational Milestones

Throughout the history of formal special education teacher preparation, clinical preparation of special education teachers has been considered integral to developing effective special educators and undoubtedly affected by: (a) research on effective assessment and methods for educating students with disabilities, (b) changing perspectives on how services to students with disabilities and teacher preparation should be provided, (c) trends in general education teacher preparation, and (d) teacher shortages. Figure 1 illustrates a timeline of major eras in the history of special education teacher preparation, and these eras are presented in the next sections.

The Early Years and Categorical Preparation

In the mid 1800s to early 1900s, students with disabilities were largely excluded from society and schools. Teacher preparation occurred primarily in residential settings, led by prominent clinicians, such as Itard and Gallaudet and driven by conceptions of disability that had their roots in medicine and psychology (Brownell et al., 2010). Disabilities were thought to be the result of specific disorders and required instructional responses targeting those disorders. By the mid-1900s, demands to ensure quality public education for all students resulted in teacher preparation programs moving from Normal Schools, apprenticeship models of preparation affiliated with high schools, to teachers' colleges and universities (Whitford & Villaume, 2014). By 1952, 122 special education teacher preparation programs were being offered at colleges and universities (Mackie & Dunn, 1954), reflecting the realization that providing students with disabilities depended on having specially trained teachers.

In 1975, P.L. 94-142, the Education for All Handicapped Children Act (EAHCA), which eventually became IDEA, required the education of students with disabilities in schools. This resulted in the need for large numbers of teachers to serve these students and created the need for preparation programs to address competencies introduced in the legislation (e.g., evaluation, Individual Education Program development) in addition to the development of an instructional knowledge base. Preparation was largely categorical in nature, based on (a) medical and psychological perspectives on disability persisting from special education's beginning, (b) the EAHCA's requirement for schools to identify students according to specific disability categories, and (c) federal funding provided to universities and colleges based on such categories (Brownell et al., 2010). Students with disabilities were often served in classrooms organized by disability category (e.g., learning disabilities and emotional and behavioral disorders), and teacher preparation was designed to support this approach. Following state interpretations of federal legislation, and state-level decisions regarding educator certification, preparation coursework and clinical preparation in the form of field experiences focused on the characteristics of students within a specific category and methods for instructing and assessing those students. Candidates often practiced these methods in university-based clinics, centers, and public schools serving students according to their identified disability (e.g., Connor, 1976; Laster, 2013), being prepared like clinicians who could assess students' needs and design interventions to support them. Demand for categorically prepared teachers, however, outstripped the number of categorically certified teachers available to teach.

Noncategorical Preparation

The need for special education teachers prompted by the passage of the EAHCA resulted in dramatic shortages of categorically certified teachers. These shortages combined with research on student interventions and assessments led public schools and teacher preparation programs to shift away from

categorical to noncategorical approaches (Brownell et al., 2010). In the late 1960s, continuing into the 1970s, researchers showed that assessing students on specific academic and behavioral skills and then intervening in identified areas could help teachers assess the efficacy of their interventions regardless of disability type (e.g., Deno et al., 1986). Further, researchers demonstrated that many students with disabilities benefitted from direct systematic instruction (e.g., Bereiter & Engelmann, 1966).

In response to shortages and possibly research findings that failed to show a connection between disability type and instructional support, public schools began educating students with different disabilities together, for example, varying exceptionalities resource rooms that might serve students with both specific learning disabilities and mild intellectual disabilities. This move allowed teachers with certification in different areas of disability to teach in those classrooms. As such, states began shifting licensure requirements from categorical to noncategorical designations, a change that persists to this day (Sindelar et al., 2019). Programs followed suit and began educating special education teacher candidates in noncategorical programs (e.g., mild disabilities, severe disabilities), focusing less on characteristics of individual disabilities and more on assessment of academic and behavioral skills and research-based methods for intervening in those skills. This perspective on research-based assessment and intervention persists in preparation program coursework and clinical experiences to this day.

During the period of transition from categorical to noncategorical approaches to teacher preparation, special and general teacher education scholars also pushed for preparation programs to demonstrate their efficacy in preparing competent teachers and strengthening field experiences. Researchers interested in effective teaching and what comprised it were conducting observational studies of classroom teaching. These studies, often referred to as *process product studies*, established relationships among specific teaching behaviors (e.g., teacher directed, opportunities for students to respond), student engagement in academic learning, and student achievement (e.g., Brophy, 1979). Findings from this research combined with pressure on preparation programs to demonstrate the efficacy of their graduates led to the competency-based teacher education (CBTE) movement (Berdine et al., 1978). Teacher educators also recognized that for CBTE to be effective then quality clinical preparation experiences, characterized by well-trained mentor teachers, and close supervision and evaluation of teacher candidates were paramount (Oseroff et al., 1978).

> Practice-based approaches, based on HLPs, might also provide more uniform expectations and learning opportunities for special education teachers entering through different preparation routes.

In general education, public dissatisfaction with the quality of public schooling, caliber of teacher candidates, and rigor of teacher education programs led to calls for school and teacher preparation reform (National Commission on Excellence in Education, 1983). In response, colleges and schools of education engaged in a variety of reforms, including the formation of partnerships with public schools with the intention of improving teacher preparation, including clinical preparation, and professional development opportunities for practicing teachers (Buck et al., 1992). While pressure mounted to improve traditional teacher preparation in general and special education, shortages of special education teachers created tensions between efforts to improve teacher preparation (and associated clinical preparation) and efforts to ensure adequate numbers of special education teachers were available. Many teachers were working while preparing to be special education teachers through postbaccalaureate and alternative route programs; controlling the quality of their field experiences would be difficult.

Integrated Teacher Preparation

In the 1980s to 2000s, concerns about the efficacy of special education provided in resource and self-contained classrooms, along with ethical concerns about educating students with disabilities separately from their non-disabled peers, spurred a movement to integrate or mainstream these students in general education (Will, 1986). Simultaneously, questions were raised about the preparation of general and special education teachers for inclusive education. Scholars argued general education teachers were not prepared to adapt or modify instruction to the needs of students with disabilities and special education teachers' knowledge of the general education curriculum was insufficient to support access to it. By the early to mid 1990s, teacher educators were rethinking how they provided preparation to teacher candidates in general and special edu-

cation, as well as improving efforts to address the racial and linguistic differences in students with disabilities. Thus, calls for collaborative teacher education programs began to emerge (Brownell et al., 2010).

A recent study found that there are 272 of these programs across the U.S. (Gomez-Najarro et al., 2025). Seventy-four percent of these programs involve little integration of the two disciplines. That is, there is little or no evidence of collaboration across general and special education in coursework or clinical preparation in these programs. Only 13% of programs address how the education of students with disabilities might be influenced by race, language, and poverty, which seems problematic given the demographic characteristics of students with disabilities. Twenty-six percent of programs have been collaboratively planned and involve more fully integrated coursework and field experiences; exactly what field experiences in these programs look like, however, was not described. More concerning is that researchers have had difficulty establishing that dual preparation has an impact on the effectiveness of their graduates (see for review, Gilmour & Lam, 2025).

The effective adoption of collaborative teacher education programs was and continues to be challenged by different factors. One, chronic shortages of special education teachers make it difficult to argue for the sort of deliberate, more intensive preparation that integrated teacher education programs require. Two, these programs often lack clear theories of, and supporting research for, how collaborative teacher programs should be structured to prepare general and special education teachers who have distinct but complementary knowledge and skill sets. Three, there is little research supporting the efficacy of this approach to teacher education.

The Present: Major Advances and Practice-changing Innovations

By the 21st Century, the preparation of special education teachers differed considerably in program structure and content. This program diversity is likely the consequence of: (a) a need to prepare special education teachers broadly and expeditiously, to address shortages, for different age groups, settings, content, and disability as well as requirements outlined in the Individuals with Disabilities Education Act (Sindelar et al., 2019); (b) the lack of consensus about exactly what special education teachers should know and be able to do; (c) the existence of multiple options for becoming a special education teacher; and (d) an insufficient research base informing how to effectively prepare special education teachers likely contributed to this program diversity. At the same time, teacher education scholars were voicing concerns that the well-documented disconnect that existed between instructional approaches advocated for in preparation programs and those implemented in schools interfered with candidates' opportunities to practice effectively (Grossman & McDonald, 2008).

It is within this context that scholars argued for a practice-based approach to teacher learning that extends well beyond field experiences. This approach is premised on the fact that specific practices can be identified that define effective teaching; thus, an approach to preparing teachers can be crafted that would enable them to acquire these practices without relying solely on field experience. Prominent scholars assert that these effective teaching practices, or high-leverage practices (HLPs), cut across different academic disciplines and age groups and are research-based (e.g., Grossman & McDonald, 2008; McLeskey et al., 2019). From their perspective, these HLPs are important for defining the professional practice of teachers and focus efforts to improve it in preparation. Further, once identified, HLPs can be dissected and deliberately taught to novice teachers using a variety of practice-based activities, such as video analysis and simulations, across different content-specific methods courses. Practice-based opportunities can then be scaffolded to move from coursework-based learning experiences into carefully structured clinical preparation experiences (e.g., structured tutoring with individual or small groups of K-12 students), comprising a practice-based approach to teacher education (Leko et al., 2024). Moreover, Grossman and McDonald (2008) believe that implementing such a practice-based approach to teacher education would help solve long-standing problems about the well-documented disconnect between what is learned in teacher preparation and school-based clinical experiences. Practice-based approaches, based on HLPs, might also provide more uniform expectations and learning opportunities for special education teachers entering through different preparation routes. Inherent in a practice-based approach is a shift from didactic and passive learning within courses and professional development to immersive, feedback-rich, and technology-enhanced experiences that better prepare and retain special education teachers.

Implementing a Practice-Based Approach to Teacher Preparation

A practice-based approach to special education teacher preparation depends on focused learning opportunities that begin in coursework and extend into authentic settings (e.g., tutoring, small group instruction with K-12 students, student teaching). The focus in practice-based approaches should be defined by the critical content and HLPs known to support positive outcomes for stu-

TABLE 2: Practice-Based Learning Opportunities for Teacher Preparation

Evidence-Based Practice	Definition	Stage Use			Examples of Supporting Research
		Early	Mid	End	
Video Modeling & Analysis	Use of video models to demonstrate effective instruction and engage in analysis of own instruction	x	x	x	Meline et al., 2023; Nagro & Cornelius, 2013
Simulation					
Microteaching/ Role play	Discrete, short, simple instructional practices	x			Dunst et al., 2019
Rehearsal	Role play in more complex scenarios with repeated instructional cycles		x	x	Kang & Windschitl, 2018
Mixed Reality	Simulation with virtual avatar students Can be paired with video analysis		x	x	Cohen et al., 2020; 2025; Qualls et al., 2024
Performance Feedback	Specific, positive, corrective, and immediate feedback implemented by a peer (non-evaluative) or teacher educator (may be evaluative)	x	x	x	Brock & Carter, 2017; Kraft et al., 2018; Loman et al., 2020
Structured Tutoring	Teacher candidates apply evidence-based practices during instruction with a student		x	x	Al Otaiba et al., 2012; Englert et al., 2020; Hughes & Braun, 2019

dents with disabilities. For example, teaching students a decoding strategy (critical content) using explicit instruction (HLP) is an instructional skill that most special education teachers should be able to implement proficiently in practice. First, teacher candidates should learn the main components of the skill and develop knowledge of what the skill looks like in practice. This is often accomplished through modeling of the HLP (Grossman et al., 2009). Second, teacher candidates need opportunities to practice the skill in different contexts that become increasingly complex. Finally, teacher candidates must receive feedback (Brock & Carter, 2017) and be able to analyze their performance (Nagro et al., 2017). Next, we describe practice-based approaches (see Table 1) and specific characteristics of mentor teachers that support this serial approach to teacher learning.

Video Modeling and Analysis. Video modeling and analysis provides teacher candidates with opportunities to observe, analyze, and reflect upon their instruction, other candidates' instruction, or that of expert teachers by watching video-recorded lessons. Teacher educators can use video models to demonstrate the components of effective instruction without the need for teacher candidates to be present in PK-12 classrooms. In another application, teacher candidates can be asked to record and analyze their own instruction in various clinical placements.

Research on the use of video modeling and analysis has pointed to its effectiveness as a practice-based learning opportunity for teacher candidates (Nagro & Cornelius, 2013). For example, teacher candidates who engaged in video analysis had better outcomes than candidates who did not engage in video analysis in terms of teacher-student interactions (Fukkink & Tavecchio, 2010), student engagement (Moore, 1976), and specific and general praise (Wright et al., 2012).

Video modeling and analysis is a

versatile practice and can be used at the initial stages of special education teacher preparation when teacher candidates need good models of instructional practices or in conjunction with culminating clinical placements when teacher candidates are teaching themselves and need opportunities to reflect upon their performance. Several software programs (e.g., Edthena, COACHED) support time-stamped annotations whereby the viewer can pause the video and add a note or reflection. The most effective applications of video modeling and analysis include guided protocols that scaffold teacher candidates' analysis (Nagro et al., 2017) or provide candidates with specific prompts and questions for reflection.

Simulation. Simulations provide teacher candidates with the opportunity to practice teaching in ways that mirror authentic PK-12 classrooms. Benefits of simulations are that teacher candidates can practice in low-stakes, controlled, supportive environments without any potential risk to PK-12 students. There are three common simulations: microteaching, rehearsal, and mixed reality simulations (MRS). Cohen et al. (2025) provide helpful definitions that differentiate the three practices. Microteaching or "role-plays" are when a teacher candidate assumes the role of a teacher and practices a particular skill often with peers who are acting in the roles of PK-12 students. In these instances, discrete, simple, and short instructional practices are ideal. Rehearsal is like role-play, but teacher educators take an active role in scaffolding the interaction by providing feedback and prompts for reflection so that teacher candidates engage in repeated cycles of planning, teaching, and reflecting. Rehearsal is a practice that supports teacher candidates in practicing more complex instructional routines and lessons. Finally, in MRS teacher candidates interact with virtual avatar students that can be programmed to respond in specific ways and represent a variety of student characteristics such as varying disabilities and English proficiency. A benefit of MRS is that teacher candidates can practice a skill under the same conditions multiple times or change aspects of their instruction to see how students might react differently. Each of the simulation strategies can be paired with video analysis so teacher candidates can record their instruction for later analysis and reflection.

In a large meta-analysis, microteaching had positive effects on a variety of different outcomes for teacher candidates and beginning teachers (Dunst et al., 2019). Similarly, rehearsal has been shown to improve science teacher candidates' implementation of HLPs compared to candidates in a comparison condition (Kang & Windschitl, 2018). In a literature review of 26 studies on the simulation strategies, Cohen et al. (2025) found 23 reported positive outcomes for teacher candidates, though MRS showed more promise for increasing candidate learning than other simulations. Other studies have also shown the effectiveness of MRS in improving teacher candidates' pedagogy, communication, and self-efficacy (Qualls et al., 2024), and it should be noted that MRS is more effective when combined with performance feedback, as discussed in the next section, than when it is not (Cohen et al., 2020).

When selecting from among the different simulation strategies, teacher educators must often consider time and resources. Microteaching and rehearsal are low/no cost and can be implemented at any time within any course or professional development session. MRS, on the other hand, is high cost as it requires the purchase of platforms such as Mursion, as well as an hourly charge for the time candidates spend interacting with the student avatars. The use of MRS often requires advance scheduling to ensure the virtual avatars and instructional scenarios are created and the MRS platform is available. The three types of simulations do allow for repeated practice over time in increasingly complex ways. Teacher educators might start with microteaching, then move to rehearsal, and end with MRS, if it is available at the educator preparation program.

Performance Feedback. Performance feedback is when a teacher candidate receives feedback on their instruction, often through various coaching models. The feedback can come from peers or experts and be provided in simulated or authentic situations. The most effective performance feedback is specific, positive, corrective, and immediate (Cornelius & Nagro, 2014). In peer coaching, two teacher candidates observe each other's teaching and provide feedback, usually feedback that is not evaluative (Lu, 2010). For example, a peer might tally the number of times the teacher candidate asks open-ended vs closed-ended questions within a lesson. The purpose here is to simply provide data on the number of occurrences a particular instructional practice occurs; not whether the teacher candidate's instruction is good or bad. It is important that teacher candidates be adequately prepared to provide feedback, so it is positive and supportive. Specific observation rubrics or checklists can be helpful tools when implementing peer coaching. A benefit of peer coaching is that it is a method for teacher candidates to receive ongoing feedback when teacher educators might not otherwise have enough time to conduct individual observations of every teacher candidate.

Expert-based coaching is often delivered by a teacher educator, supervisor, mentor, or cooperating teacher, and their feedback may include an evaluation of teacher candidates' instructional quality. The coach can observe instruction (a)

in-person, in real time, (b) remotely, in real time such as in Bug-in-Ear (BIE) coaching, or (c) after instruction has been completed, usually via video recording. With BIE coaching, the teacher candidate receives immediate feedback via a wireless Bluetooth earpiece from a coach who is observing the classroom synchronously via a web-based video platform (e.g., Zoom). Benefits of this model are that (a) teacher candidates can make on-the-spot changes to their practice, (b) the feedback is delivered discreetly to just the teacher candidate, and (c) coaches can provide feedback remotely without having to travel to clinical preparation sites.

Multiple literature reviews point to performance feedback and coaching as an evidence-based approach that improves teacher candidates' instruction and PK-12 students' achievement (Brock & Carter, 2017; Kraft et al., 2018). For peer coaching specifically, studies indicate teacher candidates can be taught to provide effective performance feedback that leads to improvements in instructional outcomes (e.g., Loman et al., 2020). Studies of BIE coaching provide evidence that the approach leads to increases in teacher candidates' use of HLPs (Sinclair et al., 2020). In one longitudinal study, researchers found that the positive effects of BIE coaching were still present one and two years later (Rock et al., 2014).

Structured Tutoring. Structured tutoring is a practice-based approach that enables teacher candidates to practice providing instruction to an individual student. Most often, the structured tutoring experience is connected to an educator preparation program course such that teacher candidates can apply what they are learning about content and pedagogy with a PK-12 student. A benefit of structured tutoring is that it is a more authentic practice opportunity given the ability to work with a student but in a way that is not too complex or requiring advanced behavior or classroom management. Tutoring sessions often center around a structured curriculum or lesson that includes built-in scaffolds, prompts, and explicit directions for implementation. Structured tutoring can also take place in a variety of settings from PK-12 schools to after-school programs or community-based organizations.

Research has shown several benefits of structured tutoring for teacher candidates and the PK-12 students they tutor. For example, candidates who completed structured tutoring experiences had higher levels of content knowledge compared to candidates who only completed coursework without paired tutoring (Englert et al., 2020; Spear-Swerling, 2009). Teacher candidates also increased their effectiveness in planning instruction that incorporates evidence-based practices (Al Otaiba et al., 2012) and responding to students' instructional needs (Hughes & Braun, 2019). Finally, the PK-12 students who were tutored had higher levels of reading achievement in several studies (Al Otaiba et al., 2012; Englert et al., 2020).

The Role of Mentor Teachers and Effective Schools in Field Experiences. In general education, research has failed to demonstrate a relationship between structural aspects of clinical preparation, such as hours spent in field placements, and teacher candidate effectiveness (NCTQ, 2024). Instead, findings from a small number of rigorous quantitative studies suggest that quality of practice opportunities is more important for improving candidate learning than hours spent. Specifically, the individual effectiveness of mentor teachers plays a role in the effectiveness of teacher candidates and beginning teachers. Teacher candidates assigned to mentor teachers with higher observation and student value-added scores demonstrate more effective instruction than teacher candidates assigned to mentor teachers with lower scores on one or both outcomes (Bastian et al., 2020; Goldhaber et al., 2020; Ronfeldt et al., 2020). Although the mechanism that causes candidates with more effective mentors to demonstrate stronger instructional skills than those candidates with less effective mentors has not been identified, it is likely that more effective mentors provide more modeling and feedback. In fact, Ronfeldt and colleagues found that mentors identified as more effective reported providing more coaching than other mentors. Additionally, three experimental studies of coaching showed that teacher candidates assigned to mentors trained in coaching, compared to those assigned to untrained mentors, were rated higher on observations of instructional skill or classroom management (Ronfeldt et al., 2020). Although special education does not have a similar complement of research, the research from general education is instructive for teacher educators in special education, particularly when one considers the strong evidence that exists for coaching.

IMPLICATIONS FOR PRACTICE

Research indicates practice-based learning opportunities should be carefully scaffolded, allowing teacher candidates to have multiple opportunities to practice over time, moving from simple to more complex contexts (Leko et al., 2024). Researchers present models founded upon the notion of *approximations of teaching* wherein practice begins in tightly controlled settings (e.g., coursework) then moves to less controlled, but more authentic clinical teaching experiences such as tutoring, structured field and practicum experiences, and finally student teaching (Brownell et al., 2019; Cohen et al., 2025; Grossman et al., 2009; Leko et al., 2024). This approach also applies to teacher

candidates completing other models of educator preparation programs such as residencies and apprenticeships. In these instances, teacher candidates might learn to implement HLPs and critical content through practice opportunities provided in preparation coursework or district-provided professional development and then continue to practice those skills in increasingly complex environments (e.g., tutoring situations, as behavior support teachers, as paraprofessionals, as teacher of record while working under the supervision of a mentor). In each of these settings, teacher educators, peers, or mentor teachers would provide performance feedback.

Enacting such a scaffolded approach requires teacher educators to work collaboratively to identify the HLPs and critical content (e.g., teaching decoding using explicit instruction) that are most important to practice throughout the preparation program. Without program cohesion, there is the risk that candidates will practice skills in siloed ways. Further, relying on culminating student teaching experiences to be the sole opportunity for practice will not lead to the profession-ready graduates our field needs.

For teacher candidates, it is important that they understand that proficiency develops through repeated practice with feedback. Becoming a skilled practitioner will not occur in one course or one field experience. It also will not occur without being open to performance feedback and continual self-reflection. Success incorporating a practice-based approach to teacher education is also contingent upon strong educator preparation program/school district partnerships. Such partnerships would include a shared vision and language for special educator preparation so there is alignment across the two organizations. The adoption of HLPs and the universally available resources designed to support their implementation (see CEEDAR Center: https://ceedar.education.ufl.edu) is one way to strengthen such alignment. Educator preparation programs and school districts can also rely on the use of Institute for Education Sciences Practice Guides (https://ies.ed.gov/ncee/wwc/practiceguides) and Toolkits produced by the Regional Education Labs (https://ies.ed.gov/regional-education-al-laboratories-toolkits) to identify critical content and develop practice-based opportunities that integrate critical content and HLPs.

> As a field, teacher educators and school districts need a consensus about what defines effective special education teaching, as this is fundamental to defining what makes special education teaching a profession and to designing educative efforts keyed to the most important competencies.

FORWARD-LOOKING RECOMMENDATIONS TO INSPIRE THE NEXT 50 YEARS

As the field of special education teacher preparation looks to the next 50 years in terms of clinical preparation, there is much to warrant inspiration, hope, and most importantly, innovation. At the core, we believe the field will be best served by holding steadfast to the tenets known to result in expertise: scaffolded opportunities to practice with ample access to performance feedback. We recommend the identification of critical content and the implementation of HLPs be a continued shared priority across educator preparation programs and school districts as that will provide necessary focus in our field. As a field, teacher educators and school districts need a consensus about what defines effective special education teaching, as this is fundamental to defining what makes special education teaching a profession and to designing educative efforts keyed to the most important competencies. Too often, what special educators should know and be able to do can seem expansive and without clear definition. This scenario undermines the ability to create uniformity in expectations for effective teaching and programmatically coherent educational experiences for teachers.

One example of a strong educator preparation/LEA partnership is between Little Lake City School District and California State University Long Beach (CSULB). In this partnership, teacher candidates complete a dual elementary and special education credential during a 2-year clinically based program at CSULB. Little Lake City School District provided clinical experiences and mentor teachers for the candidates and was committed to hiring them upon graduation. CSULB faculty and district leaders agreed upon key competencies and instructional high-leverage practices teacher candidates would need to learn to be successful in the district. The emphasis was on academic instruction and interventions within a Muti-Tiered System of Support (MTSS) framework which was being implemented in the district. The

CSULB teacher candidates took a series of literacy courses on tiered instruction that included aligned field experiences within the school district. Candidates implemented the focal HLPs starting within their coursework and then progressed to more authentic practice with students within the district. Faculty and district mentor teachers had common systems of evaluation so that candidates were provided with ample performance feedback. The established partnership with a shared vision and goals resulted in stronger teacher candidate-mentor teacher relationships with the added benefit that mentor teachers were learning about best practices and HLPs when they hosted CSULB teacher candidates. For more comprehensive descriptions of this partnership see Richards-Tutor et al. (2021) and Brownell et al. (2019).

The example of the CSULB/Little Lake City School District exemplifies many of the research supported educator preparation approaches identified in the literature (i.e., scaffolded learning, performance feedback), but continued research on practice-based approaches is needed to develop a true science of teacher learning. It is only within the last decade that researchers in general and special education have begun to amass enough studies to guide teacher educators' decisions about what practice-based approaches can be included in preparation programs and how they might be structured. Yet, there is still much to learn about how practice-based approaches can be leveraged to develop more complex teaching practice for students with disabilities.

Approaches to practice-based preparation will also evolve based on technological advances and adoption of new models of special educator preparation that include iterations of job-embedded preparation. Common examples include teacher residencies and registered teacher apprenticeship programs (RTAPs). Residencies and RTAPs share similar features of preparation, differing mostly in how they are funded, with a key feature being that teacher candidates are employed by a school district and receive a salary while they are completing teacher preparation experiences (Holdheide et al., 2023; Kimmel et al., 2024). This means teacher candidates in residencies and RTAPs do not need to leave the workforce in order to pursue their licensure which opens the door to the teaching profession to a wider array of individuals, especially those who cannot afford to stop working and become a full-time student in an educator preparation program. Another benefit is that these teacher candidates receive preparation that is tailored to the LEA contexts in which they are already working.

Artificial Intelligence (AI) and further developments of simulation platforms like Mursion when used ethically and responsibly, will undoubtedly play a pivotal role in further expanding the world of possibilities for practice-based approaches. We recommend a careful look at what AI can offer in terms of student support. Are there instructional and administrative tasks that could be delegated to AI such that special educators' time and effort is preserved for the most critical task: providing specialized instruction to students with disabilities? Could AI-based language processing models provide some level of performance feedback to novice special educators and support coaches and mentors in providing teachers with more timely feedback? Furthermore, in terms of clinical preparation, simulations might provide practice opportunities for special education teacher candidates to serve a broader array of students based on their race, ethnicity, language, disability label, etc. so teacher candidates are afforded a world of preparation opportunities that move beyond what is available within their own local clinical preparation sites.

We recommend continued efforts to disband silos between educator preparation programs and local school districts as well as increased communication between districts and state education agencies to inform state initiatives aligned with high -quality clinical preparation. Such efforts will require greater flexibility and novel responses to bureaucratic processes that currently make the creation of nimble partnerships and models difficult within higher education-based preparation programs. Further, leaders in teacher preparation programs and school districts will need to prioritize resources and time for the collaborative efforts required to develop consensus about those HLPs and critical content that should be the focus of practice-based opportunities and to construct and implement practice-based opportunities similar to the partnership between CSULB and Little Lake City School District. As the field improves and expands upon practice-based clinical preparation, we have no doubt students with disabilities and their families will be well-served now and for the next 50 years.

REFERENCES

Al Otaiba, S. A., Lake, V. E., Greulich, L., Folsom, J. S., & Guidry, L. (2012). Preparing beginning reading teachers: An experimental comparison of initial early literacy field experiences. *Reading and Writing, 25*(1), 109–129. https://doi.org/10.1007/s11145-010-9250-2

Bastian, K. C., Patterson, K. M., & Carpenter, D. (2020). Placed for success: Which teachers benefit from high-quality student teaching placements? *Educational Policy*, 36(7), 1583–1611. https://doi.org/10.1177/0895904820951126.

Berdine, W. H., Cegelka, P. T., & Kelly, D. (1977). Practica evaluation: A competency-based teacher education system. *Education and Training of the Mentally Retarded, 12*(4), 381–386. https://www.jstor.org/stable/23881355

Bereiter, C., & Engelmann, S. (1966). *Teaching disadvantaged children in the preschool.* Prentice Hall.

Brock, M. E., & Carter, E. W. (2017). A

meta-analysis of educator training to improve implementation of interventions for students with disabilities. *Remedial and Special Education, 38*(3), 131–144. https://doi.org/10.1177/0741932516653477

Brophy, J. E. (1979). Teacher behavior and its effects. *Journal of Educational Psychology, 71*(6), 733–750. https://doi.org/10.1037/0022-0663.71.6.733

Brownell, M. T., Benedict, A. E., Leko, M. M., Peyton, D., Pua, D., & Richards-Tutor, C. (2019). A continuum of pedagogies for preparing teachers to use high-leverage practices. *Remedial and Special Education*, *40*(6), 338–355.

Brownell, M. T., Sindelar, P. T., Kiely, M. T., & Danielson, L. (2010). Special education teacher quality and preparation: Exposing foundations, constructing a new model. *Exceptional Children, 76*(3), 357–377.

Buck, G., Morsink, C., Griffin, C., Hines, T., & Lenk, L. (1992). Preservice training: The role of field-based experiences in the preparation of effective special educators. *Teacher Education and Special Education, 15*(2), 108–123. Doi:10.1177/088840649201500206

Cohen, J., Wong, V., Krishnamachari, A., & Berlin, R. (2020). Teacher coaching in a simulated environment. *Educational Evaluation and Policy Analysis, 42*(2), 208–231. https://doi.org/10.3102/0162373720906217

Cohen, J., Marisa Yonas, A., & Elizabeth Wilson, K. (2025). Approximating Teaching: A Systematic Review of the Research. *Review of Educational Research*, *0*(0). https://doi.org/10.3102/00346543251368383

Connor, F. P. (1976). The past is prologue: Teacher preparation in special education. *Exceptional Children, 42*(7), 366–378. https://doi.org/10.1177/001440297604200702

Cornelius, K. E., & Nagro, S. A. (2014). Evaluating the evidence base of performance feedback in preservice special education teacher training. *Teacher Education and Special Education*, *37*(2), 133–146. https://doi.org/10.1177/0888406414521837

Deno, S. L., Marston, D., & Tindal, G. (1986). Direct and frequent curriculum-based measurement: An alternative for educational decision making. *Special Services in the Schools, 2*(2-3)*, 5–27.* https://doi.org/10.1300/J008v02n02_02

Dunst, C. J., Hamby, D. W., Howse, R. B., Wilkie, H., & Annas, K. (2019). Meta-synthesis of preservice professional preparation and teacher education research studies. *Education Sciences*, *9*(1), 50. https://doi.org/10.3390/educsci9010050

Education for All Handicapped Children Act, Pub. L. No. 94-142 (1975)

Englert, C. S., Mariage, T. V., Truckenmiller, A. J., Brehmer, J., Hicks, K., & Chamberlain, C. (2020). Preparing special education preservice teachers to teach phonics to struggling readers: Reducing the gap between expert and novice performance. *Teacher Education and Special Education, 43*(3), 235–256. https://doi.org/10.1177/0888406419863365

Ericsson, K. A. (2014). *The road to excellence: The acquisition of expert performance in the arts and sciences, sports, and games.* Psychology Press.

Fukkink, R. G., & Tavecchio, L. W. (2010). Effects of video interaction guidance on early childhood teachers. *Teaching and Teacher Education, 26*(8), 1652–1659. https://doi.org/10.1016/j.tate.2010.06.016

Gilmour, A., & Lam, T. (2025). A systematic review and meta-analysis of dual certification in special education and general education. *The Journal of Special Education*, *0*(0), 1–11. https://doi.org/10.1177/00224669251365233

Goldhaber, D., Krieg, J., & Theobald, R. (2020). Effective like me? Does having a more productive mentor improve the productivity of mentees? *Labour Economics*, *63*, 101792. https://doi.org/10.1016/j.labeco.2019.101792

Gomez-Najarro, J., Pugach, M. C., & Blanton, L. P. (2025). Advancing Teacher Education for Inclusion: Using a Multidimensional Framework to Analyze the Discourse of Dual Certification. *Teacher Education and Special Education*, *48*(3), 192–211. https://doi.org/10.1177/08884064251349849

Grossman, P., Hammerness, K., McDonald, M. (2009). Redefining teaching, re-imagining teacher education. *Teachers and Teaching: Theory and Practice, 15*(2), 273–289. https://doi.org/10.1080/13540600902875340

Grossman, P., & McDonald, M. (2008). Back to the Future: Directions for Research in Teaching and Teacher Education. *American Educational Research Journal*, *45*(1), 184–205. https://doi.org/10.3102/0002831207312906

Holdheide, L., Kimmel, L., Jirous-Rapp, J., & James, W. (2023). *Take a seat at the table.* American Institutes for Research. https://www.air.org/sites/default/files/2023-04/EPP-Role-in-Apprenticeship-Brief-AACTE-GTL-Center-CEEDAR-April-2023.pdf

Hollins, E. R., & Warner, C. K. (2021). *Rethinking teacher preparation program design*. Routledge.

Hughes, M. T., & Braun, G. (2019). Experiential learning experiences to enhance preservice special educators' literacy instruction. *International Electronic Journal of Elementary Education, 12*(1), 93–101. https://doi.org/10.26822/iejee.2019155341

Kang, H., & Windschitl, M. (2018). How does practice-based teacher preparation influence novices' first-year instruction? *Teachers College Record*, *120*(8), 1–44. https://doi.org/10.1177/016146811812000803

Kimmel, L., Krohn, C., Herring, C., & Alvarez McHatton, P. (2024). *Creating pathways into the profession while building diversity with registered teacher apprenticeship programs*. American Institutes for Research. https://www.air.org/sites/default/files/2024-01/RTAP_Diveristy_BranchED_GTL.pdf

Kraft, M. A., Blazar, D., & Hogan, D. (2018). The effect of teacher coaching on instruction and achievement: A meta-analysis of the causal evidence. *Review of Educational Research*, *88*(4), 547–588. https://doi.org/10.3102/0034654318759268

Laster, B. P. (2013). A historical view of student learning and teacher development in reading clinics. In E. Ortlieb & E. H. Cheek, Jr. (Eds.), *Advanced Literacy Practices: From the Clinic to the Classroom*. Emerald Group Publishing: Bingley, United Kingdom.

Leko, M. M., Brownell, M. T., O'Brien, K., & Nagro, S. A. (2024). Capitalizing on the potential of practice-based preparation in special education teacher preparation. In E. D. McCray, E. A. Bettini, P.T. Sindelar, J. McLeskey, & M. T. Brownell (Eds.), *Handbook of Research on Special Education Teacher Preparation* (2nd ed, pp. 106–125). Routledge.

Loman, K., Nickens, N., Tye, N., Danley, A., Snider, K., McCoy, A., ... & Gilbert, A. (2020). Peer coach during field experiences: Cultivating teacher candidates' peer feedback and reflective practices. *Journal of Early Childhood Teacher Education*, *41*(1), 85–99. https://doi.org/10.1080/10901027.2019.1569183

Mackie, R. P., & Dunn, L. M. (1954). *College and university programs for the preparation of teachers of exceptional children*. Washington, DC: U.S. Department of Health, Education, and Welfare, Office of Education. https://babel.hathitrust.org/cgi/pt?id=mdp.39015031804381&seq=17

Meline, M., Harn, B., Jamgochian, E., Stickland-Cohen, M. K., Linan-Thompson, S., & Lucero, A. (2023). Examining the use of video analysis on teacher instruction and teacher outcomes. *The Journal of Special Education*, *57*(2), 83–93. https://doi.org/10.1177/00224669221133773

McLeskey, J., Maheady, L., Billingsley, B., Brownell, M., & Lewis, T. (2019). *High-leverage practices for inclusive classrooms.* Routledge.

Moore, R. S. (1976). The effects of videotaped feedback and self-evaluation forms on teaching skills, musicianship and creativity of prospective elementary teachers. *Bulletin of the Council for Research in Music Education, 47*, 1–7.

Nagro, S. A., & Cornelius, K. E. (2013). Evaluating the evidence base of video analysis: A special education teacher development tool. *Teacher Education and Special Education*, *36*(4), 312–329. https://doi.

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org/10.1177/0888406413501090

Nagro, S. A., DeBettencourt, L. U., Rosenberg, M. S., Carran, D. T., & Weiss, M. P. (2017). The effects of guided video analysis on teacher candidates' reflective ability and instructional skills. *Teacher Education and Special Education, 40*(1), 7–25. https://doi.org/10.1177/0888406416680469

National Center on Teacher Quality. (2024). *Clinical practice framework research rationale*. Authors. https://www.nctq.org/research-insights/clinical-practice-framework-research-rationale/

National Commission on Excellence in Education (1983). *A nation at risk: The imperative for education reform.* Washington, DC: U.S. Department of Education. https://eric.ed.gov/?id=ED226006

O'Brien, K. M., Nagro, S. A., Binkert, G. D., Szocik, K., & Gerry, M. (2024). Field experiences in special education teacher preparation: A review of the literature. *Teacher Education and Special Education*, *47*(1), 5–25. https://doi.org/10.1177/08884064231177662

Oseroff, A., Souder, B., & Conners, R. (1978). Field-based instruction: Outcomes, placement, and evaluation. *Teacher Education and Special Education, 1*(2), 8–13. https://doi.org/10.1177/088840647800100203

Qualls, L. W., Carlson, A., Scott, S. N., Cunningham, J. E., & Hirsch, S. E. (2024). Special education teachers' preservice experiences with mixed-reality simulation: A systematic review. *Teacher Education and Special Education*, *47*(2), 124–141. https://doi.org/10.1177/08884064231226255

Richards-Tutor, C., Barber, B., Benedict, A., Brownell, M., Martinez-Vargas, L., & Gates, J. (2021). Using high-leverage practices to organize practice-based opportunities. In P. T. Chandler & L. Barron (Eds.), *Rethinking School-University Partnerships*. Information Age Publishing. https://www.emerald.com/books/edited-volume/18567/chapter/102174339/Using-High-Leverage-Practices-to-Organize-Practice

Rock, M. L., Schumacker, R. E., Gregg, M., Howard, P. W., Gable, R. A., & Zigmond, N. (2014). How are they now? Longer term effects of e coaching through online bug-in-ear technology. *Teacher Education and Special Education*, *37*(2), 161–181. https://doi.org/10.1177/0888406414525048

Ronfeldt, M., Matsko, K. K., Greene Nolan, H., & Reininger, M. (2020). Three different measures of graduates' instructional readiness and the features of preservice preparation that predict them. *Journal of Teacher Education*, *72*(1), 56–71. https://doi.org/10.1177/0022487120919753

Sinclair, A. C., Gesel, S. A., LeJeune, L. M., & Lemons, C. J. (2020). A review of the evidence for real-time performance feedback to improve instructional practice. *The Journal of Special Education*, *54*(2), 90–100. https://doi.org/10.1177/0022466919878470

Sindelar, P. T., Fisher, T. L., & Myers, J. A. (2019). The landscape of Special Education licensure, 2016. *Teacher Education and Special Education*, *42*(2), 101–116. https://doi.org/10.1177/0888406418761533

Spear-Swerling, L. (2009). A literacy tutoring experience for prospective special educators and struggling second graders. *Journal of Learning Disabilities*, *42*(5), 431–443. https://doi.org/10.1177/0022219409338738

Whitford, B. L., & Villaume, S. K. (2014). Clinical teacher preparation: A retrospective. *Peabody Journal of Education, 89*(4), 423–435. https://www.jstor.org/stable/43909786

Will, M. C. (1986). Educating children with learning problems: A shared responsibility. *Exceptional Children*, *52*(2), 411–415. https://doi.org/10.1177/001440298605200502

Wright, M. R., Ellis, D. N., & Baxter, A. (2012). The effect of immediate or delayed video-based teacher self-evaluation on Head Start teachers' use of praise. *Journal of Research in Childhood Education, 26*(2), 187–198. https://doi.org/10.1080/02568543.2012.657745