Teaching Students with Disabilities who Access the General Curriculum: A Historical Perspective

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ABSTRACT

As the field celebrates the 50th anniversary of the Individuals with Disabilities Education Act (IDEA), it is important to recognize the progress made in ensuring that students with disabilities have access to meaningful educational opportunities and improved outcomes. Effective instruction is at the heart of special education and meaningful access. In this article, we argue that effective instruction is complex and difficult, but much progress has been made. We trace the evolution of thinking about instruction for students with disabilities who access the general curriculum from the focus on psychological processes to evidence-based and high-leverage practices. We describe four themes around major advances and practice changing innovations: (1) specially designed instruction built on access to the general education curriculum, (2) a special education research base developing effective instructional components, (3) consensus around high-leverage practices, and (4) data collection acknowledged as a critical component of instruction. We conclude with implications and ideas for the future.

KEYWORDS

Evidence-based practices, general education curriculum, inclusive education, special education, specially designed instruction

Contemporary special education has been shaped by the Individuals with Disabilities Education Improvement Act (IDEA; 2004) since its passage in 1975 as the Education for All Handicapped Children Act (P.L. 94-142). Aspects of IDEA—child find, assessment, instruction, placement, funding, family-centered services, administration, and more—have substantially influenced the daily practice of special educators. IDEA also influences other aspects of society including medicine, psychology, and law. What is more, although it was a product of political processes in the United States of America, IDEA has also influenced disability services in many other countries (Gordon-Gould & Hornby, 2023). It would probably be too strong to say that IDEA *is* special education, but if it is not equivalent to special education, its core goal is to provide something that sounds a lot like special education: a Free Appropriate Public Education (FAPE) for students with disabilities. Processes that special educators use to pursue that goal are (a) Individualized Education Programs (IEPs) delivered in (b) least restrictive environments, using (c) equitable assessment procedures to identify eligible individuals and determine their needs with (d) decisions about children's education shared equally with parents, while (e) protecting the legal rights of the students and their families.

Although we believe that each of these pillars of special education is important, we argue that specially designed instruction historically was and should continue to be the foremost focus of special education for students with disabilities who access the general curriculum. Although it has sometimes been subordinated to the other important aspects of FAPE, we see the core function of providing FAPE as the development and implementation of IEPs with specially designed instruction that meets the unique needs of students with disabilities. Said another way, we are emphasizing special *education*. In this article, focused on students with disabilities

TABLE 1: Four Approaches to Instruction for Students with Disability who Access the General Curriculum

	Medical	Diagnostic-Remedial (Psychological)	Task-Analytic (Educational)	Legal
Causes	• Genetic • Structural • Chemical	• Developmental deviations • Mental processes	• Causes don't really matter • Learned behavior • Inadequate instruction	• Agnostic • Must fit characteristics definitions in regulations
Assessment	• Developmental history • Karyotyping • "Soft" neurological tests	• Psychological processes • Strengths & weaknesses • Psycho-battery	• Compare what task-specific knowledge and skills learners can and cannot do • Assess development formatively	• Non-discriminatory • Using measures that are reliable and valid • Tests administered by trained professionals
Intervention	• Medications • Sensory correction • Patterning	• Remediate weak processes • Teach through strong processes • Match instruction to strengths and weaknesses	• Systematically and explicitly teach needed skills • Adjust instruction based on formative mastery assessments	• FAPE • Individualized (IEP) • Least restrictive environment (LRE)

who access the general curriculum, we explain our view on the importance of instruction, tracing its evolution from historical foundations to contemporary, evidence-based and high-leverage practices. We describe how major advances have changed our thinking about effective instruction and the knowledge and skills necessary for teachers to implement it. Finally, we hypothesize the reasons why these effective practices are not seen in every classroom and suggest what the next 50 years might bring.

We make two critical assumptions in this article: (a) "If the child hasn't yet learned, he hasn't yet successfully been taught" (Bateman, 1967, p. 220) and (b) effective instruction is complex and requires significant skill and training to implement faithfully and successfully. These assumptions have not always been in vogue. However, specially designed instruction, the individualized instruction guaranteed by IDEA for students with disabilities, is the crux of what special educators do every day. Designing and implementing specially designed instruction requires expertise in understanding student characteristics, curriculum content, task analysis, assessment, and the components of effective instruction. As special education has advanced, the emphasis on effective instruction and what constitutes it has shifted and changed. We argue that these shifts and changes have brought special education to a time when there is an increased focus on instruction and the direct effect it has on student outcomes.

HISTORICAL FOUNDATIONS

Prior to the 1970s, there were few special services for students with disabilities. There were some special schools for children with sensory deficits, emotional or behavioral disorders, and intellectual disabilities, but many children with disabilities either stayed at home, lived in residential facilities (i.e., "hospitals"), or struggled to learn in public school systems that had minimal or no supports for them (Gerber, 2017; Kauffman & Landrum, 2006; Polloway et al., 2010). Specialized instruction, such as what Elizabeth Farrell provided in the 1920s in "ungraded classes" in New York City, was rare and only occurred in isolated locations around the US (Gerber, 2017). Parents and teachers who sought help for their children often turned to medical doctors or psychologists who were studying reading or intellectual disabilities. Adaptations in instruction simply were rarely available in U.S. classrooms of the 1950s and 60s. Thus, much of the emphasis in early provision of services for students with disabilities came from other disciplines.

Historical contributors to special

education represent those disciplines (Hallahan & Mercer, 2002; Kauffman & Landrum, 2006; Polloway et al., 2010). Samuel Orton, noted for his theories about reading disabilities, was a physician. Fritz Redl, who developed practices for assessing and treating students with emotional and behavioral disorders, was trained as a psychoanalyst. Alfred Strauss, who studied psychiatry and neurology, and Heinz Werner, who studied philosophy and psychology, were noted for their extensive research about children with intellectual disabilities.

As the category of learning disabilities emerged in the 1960s, Bateman (1967) described three approaches to assessment and intervention, including those allied disciplines. To what she called the "medical" and "diagnostic-remedial" orientations, she added a third perspective that she identified as "task-analytic." Of course, a fourth discipline, law, was also emerging in the 1960s and 70s. We created Table 1 to show Bateman's three approaches, and we added the legal discipline. Given their prominence in the evolution of instruction for students with disabilities who access the general curriculum, we describe these four approaches that affected special education in the table, and, in the following sections, we provide narrative about them with special consideration of assessment and intervention.

Medical

As shown in Table 1, medical personnel emphasized the physical nature of learning problems. They presumed that the problems were neurological in origin and, consequently, focused on "minimal brain dysfunction" (Clements & Peters, 1962). Lacking sophisticated neuroimaging techniques such as computerized axial tomography (CT scans) and magnetoencephalography (MEG) of the 21st century, they assessed children's behavior on tasks presumed to be affected by specific parts of the child's neurology. In addition to common school tests in, for example, reading, they assessed children's early history in search of late passage of developmental milestones (e.g., walking, speaking, toileting, etc.), and they tested their performance on common tasks such as standing on one foot, walking a straight line, touching one's nose, opening a doorknob, alternately puffing one cheek after the other, etc. The idea was that poor performance on certain tasks would indicate where in the physical nervous system problems were occurring (Clements & Peters, 1962; Rabe, 1969; Touwen & Prechtl, 1970).

The interventions recommended for addressing the problems of children with minimal brain dysfunction were often eclectic. Parents and children were referred for psychotherapy, counseling, perceptual training, and medication (e.g., Hatton, 1966). Some physicians prescribed amphetamines or other stimulants, for example, but gradually the medication of choice became methylphenidate (i.e., "Ritalin"). Although some early studies showed promising benefits (Conners & Eisenberg, 1963), subsequent studies raised concerns that pharmacological interventions mostly affected parents' and teachers' ratings of children's hyperactivity and rarely influenced academic outcomes (Conners, 1971; Kavale, 1982; see also DeGrandpre, 2000; Rodan et al., 2025; Schulz et al., 2021).

Diagnostic-Remedial/ Psychological

The diagnostic-remedial view of learning problems drew extensively from the psychology of perception and language. Academic learning problems were correlated with psychological processes in perceiving stimuli or in using language. Examples of these processes included visual discrimination, figure-ground, auditory association, and visual-motor association. Comparisons of the performance of students with disabilities to that of their non-disabled peers on tests such as the *Frostig Tests of Visual Perception* (Frostig et al., 1964) and the *Illinois Test of Psycholinguistic Abilities* (Kirk et al., 1961) bolstered the case that these processes were important (e.g., Gupta et al., 1978; Kass, 1966). Moreover, testing of individual students revealed inconsistent patterns of strengths and weaknesses across children. Whereas some were strong in certain areas and weak in others, others were strong and weak in different patterns of areas.

To address the problems revealed by diagnostic assessment of these process strengths and weaknesses, psychologists and educators created lessons, activities, and materials for use in clinics and classrooms. Some approaches emphasized remediating weak processes; others recommended modifying instruction so that it would take advantage of a learner's strengths.

Researchers examined the effects of remediating weak psychological processes such as visual perception (i.e., "reversals"), auditory sequential memory (more recently called "digit span"). The results of many studies were disappointing: After training to improve weak processes, students generally got better scores on the same measures that showed the weaknesses, they only sometimes got better scores on some similar tests, and very rarely got better scores in core academic skills (Hammill & Larsen, 1974; Kavale, 1981; Kavale & Mattson, 1983).

Researchers also examined the effectiveness of matching instruction to students' strengths. Reviews of the results of studies that tested the matching hypothesis showed that adapting instruction to learners' styles (i.e., modality preferences) did not result in better outcomes (Kavale & Forness, 1987; Pashler et al., 2008).

Task Analytic/Educational

Some special educators did not agree with the idea that medical and diagnostic-remedial approaches would change academic and social behavior of students. They challenged both the technical adequacy of the tests as well as the relevance of the underlying theories (e.g., Engelmann, 1967; Mann, 1971). Instead, they emphasized analysis of learning tasks and behavior to identify component skills that students needed to learn to succeed.

Some scholars conducted intensive studies, often of individual children, to compare detailed variations in teaching practices. For example, Thomas Lovitt and his colleagues developed and refined simple methods for measuring academic performance and studied teaching procedures for increasing reading and arithmetic computation fluency for students with learning disabilities (e.g., Lovitt, 1967; Lovitt & Curtis, 1968; Smith & Lovitt, 1973). These methods were early applications of behavior analysis and foreshadowed curriculum-based measurement.

Others began developing reading, language, and arithmetic curricula that were predicated, not on psychological theories, but on systematic examination of what students needed to know and do to achieve successfully. For example, Siegfried Engelmann followed task- and concept-analytic principles to design the *Direct Instruction Systems for Teaching Arithmetic and Reading* or "DISTAR," which was the forerunner of what is widely known as "Direct Instruction" (Engelmann, 1969; Engelmann & Carnine, 1970).

Legal

Court cases and legislation began influencing educational practice soon after Bateman (1967) described her three approaches. The most influential event was the passage of P.L. 94-142 or the "Education of All Handicapped Children Act" in the U. S. in 1975. That law, which was subsequently reauthorized as the "Individuals with Disabilities Education Act" or IDEA, required educators to develop child specific plans of instruction and to provide special education in the student's least restrictive environment (LRE).

Individualized Education Programs (IEPs) became signed legal agreements about what special education services—including instruction, if appropriate—students were to receive. They were to be developed collaboratively by educators and parents (and the student), based on individual and non-discriminatory assessments. They were to specify goals and objectives, the educational methods to attain those goals and objectives, and measurement systems to ascertain whether the methods were enabling the learner to reach those goals and objectives. Importantly, although the IEPs were essentially instructional designs, the law was largely agnostic about the instructional methods, practices, or procedures to be employed in teaching the learners.

A second legal factor that had substantial influence on special education was the favoring of LRE. Aimed at ensuring that children with disabilities would no longer be diverted into hospitals or their homes, the LRE provision became a primary focus of special education. It provided the authority for campaigns to deliver services, not only in the school buildings in children's neighborhoods, but also in general education classrooms, leading to "inclusion" becoming a marker of success (Crocket & Kauffman, 1999; Yell, 1995) and promoted in preparation of special educators (Markelz et al., 2022).

The formulation of special education practice as IEPs and the emphasis on LRE diverted special educators from systematically developing instructional practices that could be employed to address the primary presenting problems of large numbers of students with learning disabilities, emotional and behavioral disorders, autism, and other disabilities. Calling it the most important policy debate between 1975 and 2025, Fuchs and colleagues (2025) concluded that "the research on where to teach has generally been weak and inconclusive [but] the research on how to teach, stronger and more certain" (p. 257).

Much of the historical context for specialized instruction, with the exception of the work under the task-analytic approach, was only incidentally focused on instruction. Other disciplines—particularly medicine, psychology, and law—were influential during those formative times, but they offered little help with teaching. The other disciplines addressed changes in children's biochemistry, psychological competencies, or the physical location of schooling.

A SHIFT TO EMPHASIZING INSTRUCTION

There are at least three examples of how the task-analytic educational approach finally came to prominence over time: (a) inclusion of a requirement for evidence-based instruction and participation in the general education curriculum in the 2004 IDEA reauthorization, (b) ruling by the Supreme Court that IDEA guarantees students with disabilities make meaningful progress on their IEP goals (*Endrew F. v. Douglas County School District RE-1*, 2017), and (c) funding of critical projects and research by the U.S. Department of Education.

Reauthorization of IDEA

The reauthorization of PL 94-142 as IDEA in 1990 and 2004 included specific statements about evidence-based instruction and participation in the general education curriculum. Specifically, IDEA states that an IEP will include

[*emphasis added*]:

- (I) a statement of the child's present levels of academic achievement and functional performance, including—
  - (aa) how the child's disability affects the child's involvement and *progress in the general education curriculum*;
- (IV) a statement of the special education and related services and supplementary aids and services, *based on peer-reviewed research to the extent practicable*, to be provided to the child, or on behalf of the child, and a statement of the program modifications or supports for school personnel that will be provided for the child— [emphasis added]

In addition, IDEA (2004) included provisions for the professional development of teachers and others in the areas of evidence-based practices.

Ruling by the Supreme Court: *Endrew F.*

Counter to the *Rowley* decision (1982) that had set a low bar for progress for students with disabilities, the case of *Endrew F*. (2017) established a new level for "meaningful" progress. In writing for the unanimous court, Chief Justice Roberts stated [*emphasis added*]:

> When all is said and done, a student offered an educational program providing "merely more than de minimis" progress from year to year can hardly be said to have been offered an education at all. For children with disabilities, *receiving instruction that aims so low would be tantamount to "sitting idly . . . awaiting the time when they were old enough to 'drop out.'"* Rowley, 458 U. S., at 179 (some internal quotation marks omitted). *The IDEA demands more.* It requires an educational program reasonably calculated to enable a child to make progress appropriate in light of the child's circumstances…

Although the Court refused to provide a precise indicator of "making progress," the implications for the field have been clear: Provide services (including instruction) that promote meaningful progress in educational domains for students with disabilities.

Federal Funding of Research and Dissemination Projects

The U.S. government-funded research for special education-related initiatives began at about the same time as the passage of PL 94-142. These research projects created an important foundation for effective instruction and assessment of students with disabilities. For example, the Bureau for the Education of the Handicapped in the Department of Health, Education, and Welfare funded five research projects on learning disabilities in 1977/1978. The work at these institutes investigated the systematic practices such as curriculum-based measurement, self-management procedures, and strategic instructional methods that laid the foundation for instructional practices employed by most special educators today (see special issue of *Exceptional Education Quarterly, 4*(1), 1983).

Another sustained and large-scale initiative, originating at the National Institute of Child Health and Human Development, provided support for researchers in medicine and psychology to study learning disabilities, particularly dyslexia (Lyon, 1998). The projects' focus ultimately changed from the biological basis of the disability to instruction as the researchers began examining the direct effects of instructional practice. This research contributed greatly to what is often called the "science of reading" and tiered systems of assessment and services (e.g., "response to intervention").

Although many important research programs on instruction have been funded by the U.S. Department of Education's Institute for Education Sciences (IES), the Office of Special Education and Rehabilitative Services (OSERS) and the Office of Special Education Programs (OSEP) continued to fund significant research and personnel preparation in evidence-based practices. In fact, many of the interventions we describe in subsequent sections of this paper were developed with funding through grants from these agencies.

While funding research is important, it is equally important to get effective practices into the hands of teachers. What Works Clearinghouse, a website maintained by IES through the U.S. Department of Education, grades practices based on their research evidence and provides practice guides, intervention reports, and other resources related to evidence-based practices for professional learning. The IRIS Center, a website developed and maintained through an OSEP grant, is the gold standard in professional learning materials about evidence-based practices. The Center provides training modules and resources about practices, links to articles and reports on each practice, professional learning certification, and tips for faculty and professional learning providers. The efforts described in these examples are focused on instruction and have provided a springboard for major advances and practice-changing innovations for students with disabilities who access the general curriculum.

MAJOR ADVANCES AND PRACTICE-CHANGING INNOVATIONS

We are now at a point where the task-analytic/educational approach to instruction is the standard to teaching students with disabilities who access the

TABLE 2: Categories of Advances

Category	Description	Examples
Special designed instruction built on access to general education curriculum	Focus on instruction occurring, not on place where student sits	• Every Student Succeeds Act • *Endrew F. (2017)*
Developing a research base on evidence-based practices for specially designed instruction	Instructional strategies and approaches proven effective for students with disabilities through careful research	• Systematic, explicit instruction with multiple practice opportunities in the five components of reading can improve the skills of students with reading disabilities at all ages. • Self-regulated strategy development • Fundamentals in math such as vocabulary, computation, fractions, and word-problem solving; schema-based problem solving • Positive behavior supports • Multi-tiered systems of support
Building consensus around high-leverage practices	Teaching behaviors and practice that every beginning teacher should know and be able to do	• Use explicit instruction • Use strategies to increase student engagement • Provide positive and constructive feedback
Data collection as key component of instruction	Collecting student performance data as providing instruction to determine if instruction is working	• Progress monitoring • Curriculum-based measurement • Response-to-intervention • Data-based decision making

general curriculum. There are at least four categories of instructional advances and practice-changing innovations that have evolved as part of this approach: (1) specially designed instruction that is built on access to the general education curriculum, (2) evidence-based practices validated by rigorous research, (3) instructional practices for use in all settings, and (4) progress monitoring as a critical component of instruction. Each category has seen advances, yet efforts to refine them continue. See Table 2 for a summary.

Specially Designed Instruction Built on Access to the General Education Curriculum

During the 1996-97 school year, 46% of students with disabilities (ages 3-21) were served in what was then called the "regular classroom" (U.S. Department of Education, 1999). In 2024, 67% of students with disabilities (ages 5-21) spent more than 80% of their day in general education settings (U.S. Department of Education, 2025). Given that students with disabilities were originally excluded from public schools, this is a great accomplishment. And, as we have indicated, access—getting children into schools—has been a focus of special education for some time. As important as access is, FAPE must address both *what* services students receive as well as *where* they receive those services. As more students with disabilities gain access to general education settings, focus on specially designed instruction, the *what*, guaranteed by IDEA demands continuing consideration. According to IDEA, specially designed instruction is the adapting, as appropriate to the needs of the eligible child under this part, the content, methodology, or delivery of instruction—(i) to address the unique needs of the child that result from the child's disability; and (ii) to ensure access of the child to the general curriculum so that the child can meet the educational standards within the jurisdiction of the public agency that apply to all children (Section 300.39(a)(3)).

In other words, specially designed instruction is the instruction, not the place, accommodations, or modifications that a student with a disability needs to make progress in the curriculum. That is, to meet the unique needs of students with disabilities, it is what educators must do so that the general curriculum is accessible to them. For example, for the student with a need in reading fluency that makes it impossible for her to extract meaning from grade-level text independently, specially designed instruction must address her reading fluency problems. Her peers do not need this instruction to access grade-level content; she does and is guaranteed that instruction through IDEA. Someone might recommend providing audio recordings of the grade-level text, but that would be an accommodation, not specially designed instruction. Following the determination of students' present level of academic and functional performance and their annual goals, the special educator must determine what specially designed instruction will occur; how it will be individualized, systematic, and direct; how to determine whether the student is benefitting from it; and where it can be delivered.

In addition to specially designed instruction, the reader may notice the emphasis on access to the general *cur-*

riculum in the above text from IDEA. And, in other legislation such as No Child Left Behind Act (2001) and the subsequent Every Student Succeeds Act (2015), schools are required to include students with disabilities in the assessment programs used to measure all student progress toward academic standards and must justify removal from that participation based upon evidence included in the IEP (IDEA, 2004). And "accessing the general curriculum" is defined as meaningful engagement with the curriculum, not accessing the room in which it is delivered (Weiss et al., 2025). Though there is still some confusion in practice about how state level academic standards are to be used in determining annual goals in the IEP, there is general consensus that students with disabilities are general education students first, and their special education should be oriented to building skills so they can access the general curriculum in a meaningful way, as appropriate (IDEA, 2004). Because students with disabilities, by definition, lack some skills necessary to access the general curriculum, they require specially designed instruction that includes evidence-based practices to accelerate their progress. As Naomi Zigmond (2015) stated,

> *Setting is less important than what is going on in that setting* and *place* is not what makes special education "special" or effective. Effective teaching strategies and an individualized approach are the most critical ingredients in special education and neither of these is associated solely with one particular environment (emphasis in the original; p. 206).

Developing a Research Base on Evidence-Based Practices for Specially Designed Instruction

In addition to developing the understanding that specially designed instruction is all about instruction, there have been tremendous strides in developing evidence-based practices for students with disabilities through intervention research. Though we cannot examine all these advances in detail, special education intervention research is grounded in the task-analytic approach and has contributed substantially to the understanding of effective instruction for students with disabilities. Several examples stand out. These include the work in reading by colleagues associated with the University of Texas Meadows Center (e.g., Vaughn, et al., 2025; Vaughn & Wanzek, 2023), the University of California (O'Connor, 2014; O'Connor et al., 2015), and the University of Florida Literacy Institute (e.g., Lane & Contesse, 2022; Lane et al., 2023). This work has shown that systematic, explicit instruction with multiple practice opportunities in the five components of reading can improve the skills of students with reading disabilities at all ages.

In written expression, research about self-regulated strategy development (SRSD) has provided detailed guidance about effective writing instruction (e.g., Ciullo et al., 2026; Ciullo et al., 2025; Graham et al., 2024; Graham et al., 2026; Harris et al., 2008; Harris & Graham, 2018; Mason et al., 2017). SRSD includes both a structured approach to writing and integrated explicit instruction in self-regulation strategies. This combination has proven powerful for students of all ages and for those with and without writing disabilities (e.g., Graham et al., 2012).

In math, several lines of research have been critical to understanding effective instruction. First, special education researchers have provided evidence for instruction targeting fundamentals in math such as vocabulary, computation, fractions, and word-problem solving (e.g., Fuchs et al., 2022; Fuchs et al., 2023; Powell et al., 2023a; Powell et al., 2023b; Powell et al., 2022). Second, other special education researchers have shown the benefits of schema-based problem solving (e.g., Jitendra & Star, 2017; Jitendra et al., 2017). Like interventions in reading and writing, these researchers helped us understand that effective instruction in math required the breaking down of tasks (task analysis); systematic, explicit instruction with multiple practice opportunities; the use of manipulatives, organizational structures, and peer engagement; and continuous progress monitoring.

The work around positive behavior supports has provided similarly strong guidance. Researchers from the University of Oregon developed and refined explicit, systematic teaching practices for both preventing and remediating acting out and acting in behavior problems (Frey et al., 2022; Walker, 2023; Walker et al., 2024). Special education researchers have also examined and advanced the use of multi-tiered systems of support that help teachers build classroom environments that sustain students with disabilities (Lane et al., 2025; Lane et al., 2022; Simonsen et al., 2022). They have also refined and extended earlier efforts to teach students self-management methods that allow teachers to support the individual needs of students with autism, emotional and behavioral disorders, intellectual disabilities, and learning disabilities in general education settings (Briesch & Chafouleas, 2009; Chafouleas et al., 2012; Gureasko-Moore et al., 2006; Kern et al., 2024; Sulu et al., 2023). We have provided just a few examples of the critical work around interventions for academics and behavior; there is much more exciting work happening now. Together, the strides made through research to develop effective interventions that are based on instruction that directly teaches an academic or behavioral skill (the task-analytic approach) are practice-changing.

Building Consensus around High-leverage Practices

The evidence base in effective practices in special education is much broader than it was 50 years ago. And this evidence base has provided special education teachers with choices in their design of specially designed instruction. If one examines these interventions closely, patterns begin to emerge, and identifying these patterns of instructional behaviors can be informative. In 2014, the Council for Exceptional Children "appointed a High Leverage Practices [HLP] Writing Team to develop a set of HLPs for special educators" (McLeskey et al., 2022), that are like an earlier exercise in general education called "TeachingWorks" (2026). They defined high-leverage practices as "practices that are essential to effective teaching and fundamental to supporting student learning" (McLeskey et al., 2019, p. 332). This writing group reviewed research; engaged teachers, teacher educators, administrators and other stakeholders; and developed a set of 22 HLPs that were critical to practice. Twelve of the 22 focus on instruction and include practices such as use explicit instruction, use strategies to promote active student engagement, and provide positive and constructive feedback to guide students' learning and behavior. There are similarities to these HLPs and those of TeachingWorks, allowing opportunities for common vocabulary and understanding to develop across general and special education instruction. Through the CEEDAR Center, a federally funded project, teams have created new resources about HLPs. These teams include general and special educators, as well as administrators, preparation program faculty, school representatives, and representatives of state departments of education. Together, they have come together to better understand what effective instruction looks like across subject areas and how to support teachers to do it.

Explicit instruction is a core component shared across intervention research (both behavior and academics), HLP pillar practices, and task-analytic approaches previously discussed (Archer & Hughes, 2011; Bateman, 2004). To a novice, explicit instruction sounds simple, founded on only six principles: optimize engaged time, promote high levels of success, increase content coverage, spend more time in instructional groups, scaffold instruction, and address different forms of knowledge (Archer & Hughes, 2011, p. 5). However, to include all the elements of explicit instruction (16 in total, e.g., focus instruction on critical content, break down complex skills and strategies into smaller instructional units, use clear and concise language, provide an adequate range of examples and nonexamples) is a complex undertaking that requires a great deal of skill and practice. The shorthand version of "I do, we do, you do" or "gradual release model" belies the importance of integrating and coordinating all these teaching behaviors (Archer & Hughes, 2011). However, it provides a necessary starting point for what effective instruction looks like.

Educators also need data about the features and qualities of the instruction they deliver. Students with disabilities learn more when their teachers not only know about effective practices but employ them effectively. When teachers implement evidence-based practices with fidelity, students achieve better outcomes (Gage et al., 2017; Swanson, 2024). Researchers have outlined how teachers can assess their implementation fidelity and use that data to improve instruction. (e.g., McKenna et al., 2015).

Data Collection as Key Component of Instruction

Though ideas such as test-teach-test (Morrison, 1926) were developed around 100 years ago, using data to guide instruction, or progress monitoring, grew out of measuring academic behavior in the task-analytic work of the 1960s and 1970s (e.g., Lovitt, 1967). In the work on curriculum-based measurement (CBM) by Stan Deno, Lynn and Doug Fuchs, and their colleagues and students at the University of Minnesota (see Deno, 1985), progress monitoring became a standard practice of special education. Instead of mastery measurement (e.g., unit test), CBM is a general outcome measure that can be administered repeatedly to measure student progress over time. For example, the correct number of words read in a given text in a minute can be an indicator of reading fluency. As students are taught and practice skills related to fluency, the number of words read correctly in one minute in the same level text should increase. If it does not increase toward a set goal level, then instructional changes need to be considered (e.g., intervention type, dosage). CBM has been studied extensively in reading fluency, reading comprehension, math computation, writing, spelling, and math application (e.g., McMaster et al., 2022; Stecker et al., 2005). It has also been studied using vocabulary in other content areas (e.g., Espin et al., 2013; Lembke et al., 2017). At the individual student level, such data collection is a critical part of instruction to determine if a student is progressing to the annual goals set in their IEP. This type of progress monitoring, or data-based individualization, has solid research evidence to prove its effectiveness (Lembke, 2025; McMaster et al., 2022).

Progress monitoring has also become a regular component of general education instruction. Response to intervention (RTI) or multi-tiered systems of support uses data from regular assessments of student progress in Tier 1, or general education classrooms, to identify

students who may not be progressing in the curriculum at the same rate as their peers. If data indicate students are not progressing, they may receive additional supports such as instruction in small groups, more opportunities to practice with feedback, or different instructional strategies or interventions in Tier 2. If their progress continues to lag, they may receive even more intensive, individualized instruction in Tier 3 or be referred for evaluation of a disability (Zhang et al., 2023). Critical to both examples is that teachers monitor student progress repeatedly on measures that are systematic and tightly aligned with instruction (McMaster et al., 2022). The results of these measures allow teachers to change instruction to meet students' needs, without having to wait until the unit test or end of year test.

To summarize, in the last 50 years, our understanding of instruction and development of evidence-based practices has advanced drastically, particularly for students with disabilities who access the general curriculum. Similar progress has also been made in instruction for students with more significant disabilities, which is addressed in the article by Spooner and colleagues (this issue). A larger number of students with disabilities spend more of their school day in their home schools and in general education classrooms, accessing the curriculum and participating in standards-based assessments. What are the implications of these advancements for continued research and current practice?

IMPLICATIONS FOR RESEARCH AND PRACTICE

Despite these advances, students with disabilities overall are still not achieving educators' and parents' desired educational outcomes. For example, on the National Assessment of Educational Progress (NAEP) in both 2019 and 2022, average scale scores for students with disabilities have remained flat (NCES, 2024). In the 2021-22 school year, 71% of students with disabilities graduated with a diploma from high school (NCES, 2024). In 2022, 30% of 18–24-year-olds with disabilities were neither enrolled in school nor working (NCES, 2024). Clearly, these outcomes can be improved. So, what are the implications for research and practice of the instructional advances described? The answer is both simple and complex, both new and old—specially designed instruction using evidence-based practices and data-based decision making must happen in every school and every classroom for every student with a disability. Fuchs et al. (2025) stated:

> The good news about such individualized instruction is that there is a detailed approach, sometimes referred to as data-based individualization (e.g., Deno, 1985), that has been empirically validated across decades by many researchers in multiple countries. The bad news is that practitioners infrequently conduct it. (p. 267)

"Instruction and decision making do not occur in isolation; rather, they are implemented as part of a system that often operates in siloed spaces—research, schools, policy, and teacher preparation.

Instruction and decision making do not occur in isolation; rather, they are implemented as part of a system that often operates in siloed spaces—research, schools, policy, and teacher preparation. There are implications for each space.

Research

Research has contributed significantly to the field's understanding of effective instruction over the past 50 years. Continued research is paramount to improving student outcomes, to understanding critical features of evidence-based practices, including the "for whom" and "under what conditions." As evidence accumulates from diverse disciplines, it is important that the knowledge be integrated: Pullen (2026) exemplified this integration in reading, bringing together literacy, cognitive, and instructional sciences in a coherent way. It is important that this research be distributed across schooling levels and service delivery spaces (Fuchs et al., 2025). In addition, it is important that practices be evaluated when implemented by practitioners, not just researchers (Harvey et al., 2023). An additional implication for research is the need to develop more effective means of dissemination, both knowledge about the practices (for administrators and policy makers) and implementation of the practices (for practitioners). Without a focus on dissemination, the field will continue to experience the research-to-practice gap. Finally, research that moves the field forward requires strong funding and commitment at the federal level. Effective practices are a national concern, and there are not enough resources or time for each state to replicate studies of effective academic or behavioral practices.

Schools

Advances in effective instruction also have implications for schools and local education agencies. There are many implications, but two affect the day-to-day operations of schools. First, to

implement effective instruction, special educators need opportunities, support, and professional learning to be able to do so. Evidence on working conditions indicates that the demands on special educators far outweigh the resources available to them (e.g., Bettini et al., 2016; Stark et al., 2022). Special educators spend only a small portion of their day delivering instruction (Vannest & Hagan-Burke, 2009). Do special educators even have the opportunity to provide effective, specially designed instruction, given the ways schools and special education services are organized? There is a need to identify the conditions and structures needed in schools for special educators to deliver individualized, data-based instruction with fidelity.

Second, it is also necessary for school leaders to be knowledgeable of evidence-based practices and to make a commitment to the professional learning and coaching that their teachers need (DeMatthews et al., 2020a). This commitment is not easy when additional initiatives or legislative requirements are often beyond the control of school leaders. However, it is critical for leaders to develop a school culture that supports teachers so that they can provide effective instruction, no matter the context of their school (DeMatthews et al., 2020b).

Policy

The policy implications of the expanded understanding of effective instruction are also multifaceted. One example is the call for the use of evidence-based practices in IDEA (IDEA, 2004). The intention of these policies was originally to build the desire and regard for evidence-based practice in instruction, but in far too many cases, the requirement becomes more of check-the-box compliance (e.g., "we do that" or "the vendor says that intervention is evidence-based"). Another example is the changing of the regulations for teacher licensure requirements to allow for unprepared or underprepared teachers to meet the demands of chronic teacher shortages. These changes have a direct influence on the quality of instruction provided by those teachers, even if they make it easier to fill an empty teaching position. Reductions in requirements also make it more difficult for the public to understand that effective instruction is difficult and does require professional preparation, expertise, and experience. In sum, there is a need to focus on policy that encourages and incentivizes effective instruction and the conditions that will allow it, as well as the funding and preparation requirements to support those conditions.

Teacher Preparation

There are so many implications of advances in instruction for students with disabilities for teacher preparation. We will focus on three: (a) focus coursework on evidence-based and high-leverage practices in a coherent, developmental sequence; (b) provide multiple opportunities for practice with feedback; and (c) build a professional identity that includes instruction and data-based decision making at its core. The field of special education does not have an evidence-based practice to match with every need for every child. However, the combination of evidence-based and high-leverage practices, and the process of data-based decision making are a powerful combination for beginning teachers (e.g., Theobald et al., 2021; Theobald et al., 2022). Preparation programs can focus their coursework on depth in these areas instead of breadth. Learning about specific evidence-based or high-leverage practices in one or two methods courses is not enough to build confidence for independent implementation. Rather, understanding the critical features and when to use the practice with effective teaching behaviors (e.g., explicit instruction) must be repeated and reinforced across courses and in practica (Mathews et al., 2024). Preparation programs are often quite brief, so the focus must be on evidence-based practices and not on practices that have limited or no evidence of effectiveness. The need to focus on effective practices leads to the need for preparation programs to build in practice opportunities within courses and then in collaboration with schools. Practice-based learning opportunities that include simulations, video analysis, coaching, and lesson study have shown positive results in teacher learning (Leko et al., 2024) and can be used across courses and experiences. Finally, developing a strong professional identity and one that is grounded in effective instruction is foundational for teachers' instructional choices, their supportive working conditions, and their retention in the field (e.g., Hseih, 2016). It is especially critical for special educators whose expertise is either misunderstood, miscommunicated, or not acknowledged by other educators. Developing that identity in a preparation program requires intentional and explicit instruction and reinforcement (Weiss et al., 2025).

THE NEXT 50 YEARS

As we consider the 50 years since passage of PL 94-142, we see tremendous progress for students with disabilities. A greater percentage of students with disabilities are included in general classrooms, and more are accessing the general curriculum. The approach to disability has shifted from a medical model to one that emphasizes instruction that directly addresses a student's strengths and weaknesses in academics and behavior. Research on the methods to use in that instruction has provided teachers with evidence-based and high-leverage practices. Even with these advances, the outcomes for students with disabilities

are still not where we want them. So, what's next? If we put on our rose-colored glasses for the next 50 years, we would like to see (a) research expand and sharpen the instructional focus, (b) bridging of the research-to-practice gap, and (c) a revitalization of the professionalization of teaching.

Expanding and sharpening the research focus means that the field needs more research on effective instruction. This research needs to be targeted at the existing gaps. For the practices we have, what are the critical features? For whom do they work? Under what conditions? What is required for them to be implemented with fidelity by practitioners? For the areas we still do not have evidence-based practices, what are they? What are the lines of research we need? We need to incentivize both new scholars to address these gaps and the schools where these scholars will test their interventions. In 50 years, we would hope to see an even more robust, well-rounded, and accessible group of evidence-based practices that can be implemented with fidelity by educators.

Getting these practices into schools is the next area of need for the next 50 years. The ideal would be that, in 50 years, anyone observing specially designed instruction for a student with disabilities—wherever that instruction was being delivered—would witness a knowledgeable teacher using evidence-based practices toward a specific learning objective. The observer would see the teacher collecting data on student performance and the features of the instruction, and she would use those data to adapt future instruction. Bridging the research-to-practice gap is a continuing and tough problem. Finding ways to expand the dissemination tactics already in place such as What Works Clearinghouse, IRIS Center, the CEEDAR Center, and others must be a priority. Examining the work of technical assistance centers—what is working and what is not—is critical at all levels from the classroom to state departments of education. Incentivizing preparation programs to work with school partners to prepare teacher candidates to implement evidence-based and high-leverage practices, including multiple practice opportunities with feedback, will bring more of these practices into schools. And combining the efforts of preparation programs and schools to provide supportive coaching through induction will help sustain these teachers in their jobs and give students a better chance of receiving quality instruction.

Finally, providing high-quality instruction to students who have experienced failure to learn requires a great deal of professional knowledge, expertise, and skill. In the next 50 years, we would hope to see a revitalization of a strong professional identity for special educators and a professionalization of teaching. In other words, we would like to see special educators who can clearly articulate their unique expertise in knowledge and skill around students with disabilities and their instruction. These special educators would be agents for change in their schools, collaborating with general educators and administrators for opportunities for effective instruction and advocating for appropriate services for their students. We would hope to see that this professionalism and strong identity have an impact on the relationships special educators have with families and others, moving from sometimes adversarial or compliance-focused relationships to working in a more collaborative way that honors each member's unique expertise. Perhaps a stronger professional identity and more positive collaborative relationships would encourage individuals to go into special education and encourage those in the profession to stay. If, in the next 50 years as a field, we can bring together the many disparate groups that make up special education, focus on understanding and implementing effective instruction, we may be able to write an article celebrating that we have taught all students with disabilities and they have learned.

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