

## What Does the Literature Say? Research and Journal Articles Focused on Intensive Intervention and Data-Based Individualization

This collection highlights a sampling of recent research focused on intensive intervention and data-based individualization (DBI). As different terms are used to describe intensive intervention, a search using EBSCO focused on articles that used the following related terms: intensive intervention, precision teaching, experimental teaching, clinical teaching, data-based individualization (when in the context of providing individualized instruction), and data-based program modification. Hand searches of the following journals were also conducted: *Exceptional Children*, *Journal of Special Education*, *Journal of Special Education Leadership*, *Journal of Learning Disabilities*, *Learning Disability Quarterly*, *Learning Disabilities Research and Practice*, *Teaching Exceptional Children*, *Journal of Positive Behavior Support*, *Behavior Disorders*, *Remedial and Special Education*, *Assessment for Effective Intervention*, and *Journal of Educational Psychology*. These searches were completed back to 2011, when NCII was first funded and some additional seminal articles on data-based individualization were included. Although there is a wealth of research on key components of the DBI process (e.g., progress monitoring, validated intervention programs), this list is not intended to include specific steps in the process nor is it an exhaustive review of all available literature. Additional articles and research will be added over time. The resource begins with a list of article citations, starting with the most recent. Users can access individual article abstracts by clicking on the title or find a full list of abstracts by clicking [here](#) or scrolling toward the end of the document.

To learn more about research on intensive academic and behavioral interventions view the National Center on Intensive Intervention (NCII) [Synthesis Reports on Intensive Academic and Behavioral Intervention: Annotated Bibliography](#)

### Article Citations

#### 2020<sup>1</sup>

Berkeley, S., Scanlon, D., Bailey, T. R., Sutton, J. C., & Sacco, D. M. (2020). [A snapshot of RTI implementation a decade later: New picture, same story](#). *Journal of Learning Disabilities*, 53(5), 332–342.

Bresina, B. C., & McMaster, K. L. (2020). [Exploring the relation between teacher factors and student growth in early writing](#). *Journal of Learning Disabilities*, 53(4), 311–324.

Bruhn, A. L., Wehby, J. H., & Hasselbring, T. S. (2020). [Data-based decision making for social behavior: Setting a research agenda](#). *Journal of Positive Behavior Interventions*, 22(2), 116–126.

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<sup>1</sup> Citations collected through August 2020. Additional articles will be added in future updates.

Dennis, M. S., & Gratton-Fisher, E. (2020). [Use data-based individualization to improve high school students' mathematics computation and mathematics concept, and application performance.](#) *Learning Disabilities Research & Practice*, 35(3), 126–138.

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## Article Citations and Abstracts

### **A Snapshot of RTI Implementation a Decade Later: New Picture, Same Story**

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Berkeley, S., Scanlon, D., Bailey, T. R., Sutton, J. C., & Sacco, D. M. (2020). A snapshot of RTI implementation a decade later: New picture, same story. *Journal of Learning Disabilities*, 53(5), 332–342. <https://doi.org/10.1177/0022219420915867>

Response to intervention (RTI) has evolved from its first decade of implementation. Because states guide and regulate policy and practice at the state and local education agency levels, it is important to understand their critical role in RTI implementation. A systematic review of all 50 state education agency websites was conducted to provide an updated “snapshot” of states’

interpretation of RTI a decade after IDEA regulations were finalized. Findings revealed substantive progress towards developing approaches to systematic supports to students, with a major trend in adoption of multi-tiered system of support (MTSS) models. Findings also documented continued variation in how states are communicating about tiered systems on such matters as the roles of tiered systems in schoolwide prevention frameworks, meeting special education requirements, and aligning multiple systems within schools. Implications for special education services for students with learning disabilities are discussed.

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### **Exploring the Relation between Teacher Factors and Student Growth in Early Writing**

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Bresina, B. C., & McMaster, K. L. (2020). Exploring the relation between teacher factors and student growth in early writing. *Journal of Learning Disabilities, 53*(4), 311–324.  
<https://doi.org/10.1177/0022219420913543>

Data from a small randomized control trial of teachers' use of Data-Based Instruction (DBI) for early writing were analyzed to determine the influence of teacher knowledge, skills, and treatment fidelity on student Curriculum-Based Measurement (CBM) slope. Participants included 11 elementary grade teachers who delivered intensive intervention in early writing and their students ( $n = 31$ ), all identified as either at risk for or with disabilities that affect their writing. Teachers received professional development and ongoing coaching to support the implementation of DBI for improving their students' early writing skills. Results from a multiple regression analysis suggest that teacher knowledge and skills in DBI was strongly related to student CBM slope in early writing ( $p < .01$ ) and a small but significant relation between fidelity of writing instruction and student CBM slope ( $p < .01$ ). Implications for instructional coaching and improving student writing progress are discussed.

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### **Data-Based Decision Making for Social Behavior: Setting a Research Agenda.**

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Bruhn, A. L., Wehby, J. H., & Hasselbring, T. S. (2020). Data-based decision making for social behavior: Setting a research agenda. *Journal of Positive Behavior Interventions, 22*(2), 116–126.  
<https://doi.org/10.1177/1098300719876098>

With the advent of Precision Teaching more than 50 years ago, researchers and practitioners began to examine how to use K-12 students' academic data to guide instructional decisions. Although the field has advanced with the use of curriculum-based measurement and data-driven decision rules for reading and math, the same is not true in the area of social behavior. In this article, we provide a brief retrospective of academic decision making to inform an initial call for research related to behavioral decision making. Then, we highlight areas for exploration related to baseline data, measurement tools, and features of behavior that, if answered via rigorous scientific inquiry, can move the field forward in making data-based decisions to improve behavioral outcomes.

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### **Use Data-Based Individualization to Improve High School Students' Mathematics Computation and Mathematics Concept, and Application Performance**

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Dennis, M. S., & Gratton-Fisher, E. (2020). Use data-based individualization to improve high school students' mathematics computation and mathematics concept, and application performance. *Learning Disabilities Research & Practice, 35*(3), 126–138. <https://doi.org/10.1111/ldrp.12227>

Secondary students with persistent mathematics difficulties need the most intensive intervention in order to improve their mathematics outcomes. One approach to intensifying and individualizing intervention is through data-based individualization (DBI). The present study used a single-subject, multiple-baseline-across-participants, replicated-across-skills design to investigate the effectiveness of DBI process on mathematics computation and mathematics concept and application performance of high school students who had intense needs in mathematics. Results suggest the interventions guided by the DBI process improved mathematics computation and mathematics concept and application performance of the participants. Implications of these findings and indications for future research are discussed.

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### **Effects of a Reading Intervention Implemented at Differing Intensities for Upper Elementary Students**

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Donegan, R. E., Wanzek, J., & Al Otaiba, S. (2020). Effects of a reading intervention implemented at differing intensities for upper elementary students. *Learning Disabilities Research & Practice, 35*(2), 62–71. <https://doi.org/10.1111/ldrp.12218>

Students with disabilities who display severe reading difficulties may require intensive interventions in order to make progress. The purpose of this study is to examine the effects of a multicomponent reading intervention implemented at two different intensities, in two separate randomized control trials, for a subset of fourth-grade students who displayed severe reading difficulties, and who had or were at risk for disabilities. We use multilevel models to examine the effect of a standard, less intensive implementation in Study 1, and of a more intensive implementation in Study 2, relative to typical school services. Analyses revealed no significant effects of treatment for the standard, less intensive implementation in Study 1. Significant effects for word reading and word reading fluency outcomes for students assigned to receive the intensive implementation were noted in Study 2. Implications, limitations, and directions for future research are discussed.

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### **Development of Mathematics and Self-Determination Skills for Young Adults with Extensive Support Needs**

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Gilley, D. P., Root, J. R., & Cox, S. K. (2020). Development of mathematics and self-determination skills for young adults with extensive support needs. *The Journal of Special Education*. Advance online publication. <https://doi.org/10.1177/0022466920902768>

The purpose of this study was to support the development of mathematics and self-determination skills of young adults with extensive support needs. Mathematical problem solving is a natural context for teaching two component skills of self-determination: self-monitoring and goal setting. Three young adults with extensive support needs (i.e., autism and intellectual disability)

were taught to solve real-world thematic word problems using modified schema-based instruction (MSBI). To build self-determination skills, participants self-monitored completion of problem-solving steps using a task analysis, self-graphed steps completed independently correct and then set goals for subsequent sessions. Generalization was measured within the context of scaling ingredients from a recipe without instructional supports of a task analysis or graphic organizer. Results of the multiple probe across participants design indicate a functional relation between MSBI and steps of problem solving completed independently correct. Implications for practice and research are discussed.

### **An Evaluation of Adaptations Made to Check-In Check-Out**

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Majeika, C. E., Van Camp, A. M., Wehby, J. H., Kern, L., Commisso, C. E., & Gaier, K. (2020). An evaluation of adaptations made to check-in check-out. *Journal of Positive Behavior Interventions*, 22(1), 25–37. <https://doi.org/10.1177/1098300719860131>

Check-in check-out (CICO) is a widely implemented program aimed at increasing prosocial behavior. Aligned with the logic of Tier 2 supports, CICO has a standard protocol meant to be implemented in a standardized fashion across all students. However, as CICO is not effective for all at-risk students, it is quite common to find researchers implementing adapted versions of CICO. The purpose of this review was to explore the types of, rationale for, and timing of adaptations made to CICO. Results showed that 71% of studies using CICO made adaptations to core components. While most of these adaptations were made at the onset of treatment, we found little evidence to suggest researchers had a systematic process for selecting adaptations. As schools continue to seek the most efficient and effective means to provide behavior supports to students, adaptive intervention planning is an important process to consider.

### **Professional Development to Support Teachers' Implementation of Intensive Reading Intervention: A Systematic Review**

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McMaster, K. L., Baker, K., Donegan, R., Hugh, M., & Sargent, K. (2020). Professional development to support teachers' implementation of intensive reading intervention: A systematic review. *Remedial and Special Education*. Advance online publication. <https://doi.org/10.1177/0741932520934099>

Many educators are unprepared to meet the needs of students with the most intensive reading intervention needs. The purpose of this review was to identify how researchers have provided professional development (PD) to support educators' implementation of intensive reading interventions, the extent to which these approaches included essential PD elements, and how researchers have measured implementer outcomes. In the 26 studies reviewed, implementers received initial training, and most received some form of ongoing support. Most studies appeared to incorporate one or more essential PD elements, though many lacked sufficient detail regarding the presence of these elements. Researchers used a variety of fidelity measures and other methods to assess implementer outcomes, which were typically positive. Results of this review indicate the need for researchers to report more detailed descriptions of PD activities, as well as the need for continued research on how best to support teachers' implementation of intensive reading interventions.

## **Danielson’s Framework for Teaching: Convergence and Divergence with Conceptions of Effectiveness in Special Education**

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Morris-Mathews, H., Stark, K. R., Jones, N. D., Brownell, M. T., & Bell, C. A. (2020). Danielson’s Framework for Teaching: Convergence and divergence with conceptions of effectiveness in special education. *Journal of Learning Disabilities*. Advance online publication. <https://doi.org/10.1177/0022219420941804>

Danielson’s Framework for Teaching (FFT) is currently used in more than 20 states to inform teacher evaluation and professional learning. To investigate whether FFT promotes instruction that appropriately responds to the needs of students with learning disabilities, we conduct a systematic content analysis of the instructional approach emphasized in the FFT’s Instructional Domain (Domain 3) of Danielson’s FFT. We frame our study using cognitive load theory and research regarding effective instruction for students with disabilities. We end by discussing implications regarding the evaluation and development of effective teaching for students with learning disabilities.

## **Examining the Alignment of Mathematics Instructional Practices and Mathematics Vocabulary between Core and Intervention Materials**

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Nelson, G., Hughes Pfannenstiel, K., & Zumeta Edmonds, R. (2020). Examining the alignment of mathematics instructional practices and mathematics vocabulary between core and intervention materials. *Learning Disabilities Research & Practice*, 35(1), 14–24. <https://doi.org/10.1111/ldrp.12210>

Within a multitiered system of support (MTSS), students who struggle to learn mathematics often receive core instruction and supplemental intervention in different settings, with different teachers and different sets of curriculum materials, all of which can result in poor alignment. This curriculum crosswalk describes how three sets of materials commonly used to provide core instruction and intervention differ with regard to mathematics practices and vocabulary. The results indicate that there is little overlap among all three programs for the majority ( $n = 6$ ) of the mathematics practices, and very little overlap in mathematics vocabulary (ranging from 6.3 to 24 percent). We also provide a set of research-based instructional recommendations intended to help teachers address gaps and improve alignment of core instruction and intervention.

## **Usability and Feasibility of Data-Based instruction for Students with Intensive Writing Needs**

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Poch, A. L., McMaster, K. L., & Lembke, E. S. (2020). Usability and feasibility of data-based instruction for students with intensive writing needs. *The Elementary School Journal*. Advance online publication. <https://doi.org/10.1086/711235>

A small proportion of students do not benefit sufficiently from standard intervention protocols and require more intensive, individualized instruction. Data-based instruction (DBI) has a strong evidence base for addressing students’ intensive academic needs, yet it is not widely

implemented. In this study, we explored the usability and feasibility of a professional development system to support teachers' use of DBI in writing. Data analyzed using a mixed-methods design revealed that teachers perceived supports such as coaching as facilitators of DBI implementation, whereas access to materials and external factors such as time conflicts presented challenges. Teachers made statistically significant growth from pretest to posttest on a measure of DBI knowledge and skills, implemented DBI components with fidelity, and reported that time spent on DBI activities decreased each week, supporting its usability and feasibility. Findings suggest that DBI is usable and feasible when teachers are provided ongoing professional development supports.

### **Data-Based Individualization in Mathematics to Support Middle School Teachers and Their Students with Mathematics Learning Difficulty.**

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Powell, S. R., Lembke, E. S., Ketterlin-Geller, L. R., Petscher, Y., Hwang, J., Bos, S. E., Cox, T., Mason, E. N., Pruitt-Britton, T., Thomas, E., & Hopkins, S. (2020). Data-based individualization in mathematics to support middle school teachers and their students with mathematics learning difficulty. *Studies in Educational Evaluation*, Article 100897. <https://doi.org/10.1016/j.stueduc.2020.100897>

Project STAIR (Supporting Teaching of Algebra: Individual Readiness) aims to develop and iteratively refine a framework for using data-based individualization (DBI) to support the readiness for algebra of middle-school students with mathematics learning difficulty. Project STAIR was tested in four middle schools in the United States to assess the impact of intensive professional development, ongoing coaching, and frequent student progress monitoring on teachers' DBI practices, school-level culture and climate, and students' algebra readiness. Findings from this exploratory research point to the promise of Project STAIR for improving teacher perceptions of school culture and climate related to support of students experiencing mathematics learning difficulty as well as increasing specific DBI practices, including teachers' ratings of importance, understanding, and confidence with assessment practices. Students' mathematics outcomes improved on several algebra-readiness progress monitoring measures, along with a diagnostic measure, but not on a more distal measure of mathematics performance.

### **Professional Development on Data-Based Individualization: A Mixed Research Study**

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Bruhn, A. L., Estrapala, S., Mahatmya, D., Rila, A., & Vogelgesang, K. (2019). Professional development on data-based individualization: A mixed research study. *Behavioral Disorders*. Advance online publication. <https://doi.org/10.1177/0198742919876656>

Data-based individualization (DBI) is a process of collecting and analyzing data on students' response to intervention and then making intervention adaptations accordingly. Although this process can lead to better student outcomes, very few teachers are trained in the components of DBI, particularly in relation to behavior. Improving practice requires not only ongoing professional development, but also understanding about how teachers' experiences in training can lead to better outcomes. Within the context of implementing a behavior intervention, the purpose of this study was to evaluate how participating in ongoing professional development on DBI affects teachers' perceptions of themselves in relation to the DBI framework over time.

Using a convergent, parallel mixed-methods research design, we evaluated 16 general and special education teachers' conceptual understanding, self-efficacy, and perceptions associated with DBI before, during, and after professional development. Data analysis indicated teachers reported significant improvements in all three areas over time. Qualitative data indicated active practice and collaboration with other professionals contributed to these improvements. Key findings, limitations, and future directions are discussed.

### **Teaching Rate of Change and Problem Solving to High School Students with High Incidence Disabilities at Tier 3**

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Bundock, K., Hawken, L. S., Kiuahara, S. A., O'Keeffe, B. V., O'Neill, R. E., & Cummings, M. B. (2019). Teaching rate of change and problem solving to high school students with high incidence disabilities at tier 3. *Learning Disability Quarterly*. Advance online publication. <https://doi.org/10.1177/0731948719887341>

Implementing an integrated sequence of concrete-representational-abstract depictions of mathematics concepts (CRA-I) can improve the mathematics achievement of students with disabilities, and explicit instructional strategies involving problem-solving heuristics and student verbalizations can help facilitate students' conceptual understanding of mathematics. Combining CRA-I and explicit instructional strategies may increase students' conceptual understanding and ability to express mathematical reasoning through writing. This study included three ninth-grade students with disabilities, and employed a multiple-probe design across-participants to investigate a functional relation between an explicit instructional strategy within a CRA-I framework and high school students' with disabilities proficiency in solving rate of change problems. Results showed that all three students improved their mathematics scores (combined Tau-U effect size = 0.77,  $p < .001$ ) and maintained improvements during a 1- to 7-week post-instruction phase. Implications for research and practice related to mathematics instruction and intervention specifically for students with learning disabilities are discussed.

### **Data-Based Decision Making for Struggling Readers in the Secondary Grades**

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Filderman, M. J., Austin, C. R., & Toste, J. R. (2019). Data-based decision making for struggling readers in the secondary grades. *Intervention in School and Clinic*, 5(1), 3–12. <https://doi.org/10.1177/1053451219832991>

The process of implementing intensive reading interventions using data-based decision-making (DBDM) becomes increasingly challenging as students move into the secondary grades and reading tasks correspondingly become more complex. This article provides teachers with guidelines to support effective implementation of DBDM for students with or at risk for reading disabilities in the secondary grades. Specifically, this article presents four steps for secondary teachers to follow within the context of a reading intervention to decide when instructional changes are needed based on progress-monitoring data. Diagnostic assessment is explained to determine students' strengths and weaknesses in order to target instruction accordingly. A case study is included throughout to demonstrate application of the steps as well as supplemental materials to help teachers implement this practice in their classrooms.



## **Federal Policy on Improving Outcomes for Students with Emotional and Behavioral Disorders: Past, Present, and Future**

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Freeman, J., Yell, M. L., Shriner, J. G., & Katsiyannis, A. (2019). Federal policy on improving outcomes for students with emotional and behavioral disorders: Past, present, and future. *Behavioral Disorders, 44*(2), 97–106. <https://doi.org/10.1177/0198742918814423>

Students with emotional and behavioral disorders (EBD) consistently lag behind their peers academically and behaviorally, are likely to be excluded from school, drop out more frequently, and face higher incarceration rates and a host of other negative outcomes as adults. Federal policy has played a key role in (a) ensuring that students with disabilities are included in schools, (b) requiring schools to meet the unique needs of learners, and (c) providing funding to support the development and implementation of evidence-based practices. Our purpose in this article is to examine the progress and challenges related to the development of federal policy supports for students with EBD, and to offer recommendations to help guide the future development of policy. Specifically, we (a) recognize the important developments of the last 30 years in policy protections and funding for students with EBD, (b) identify current challenges and emerging opportunities in several areas related to the identification and support of students with EBD, and (c) offer policy recommendations related to strengthening the use of the functional assessment and personnel capacity development.

## **Does the Severity of Students' Pre-Intervention Math Deficits Affect Responsiveness to Generally Effective First-Grade Intervention?**

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Fuchs, L. S., Fuchs, D., & Gilbert, J. K. (2019). Does the severity of students' pre-intervention math deficits affect responsiveness to generally effective first-grade intervention? *Exceptional Children, 85*(2), 147–162. <https://doi.org/10.1177/0014402918782628>

The purpose of this analysis was to assess whether effects of first-grade mathematics intervention apply across the range of at-risk learners' initial skill levels. Students were randomly assigned to control (n = 213) and two variants of intervention (n = 385) designed to improve arithmetic. Of each 30-minute intervention session (48 over 16 weeks), 25 minutes were identical in the two variants, focused on number knowledge that provides the conceptual bases for arithmetic. The other five minutes provided nonspeeded conceptual practice (n = 196) or speeded strategic practice (n = 199). Contrasts tested effects of intervention (combined across variants) versus control and effects between the variants. Moderation analysis indicated no significant interactions between at-risk children's pre-intervention mathematics skill and either contrast on any outcome. Across pre-intervention math skill, effects favored intervention over control on arithmetic and transfer to double-digit calculations and number knowledge, and favored speeded over nonspeeded practice on arithmetic.

## **Are Students with Disabilities Accessing the Curriculum? A Meta-Analysis of the Reading Achievement Gap Between Students with and without Disabilities**

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Gilmour, A. F., Fuchs, D., & Wehby, J. H. (2019). Are students with disabilities accessing the curriculum? A meta-analysis of the reading achievement gap between students with and without disabilities. *Exceptional Children, 85*(3), 329–346. <https://doi.org/10.1177/0014402918795830>

Federal policies have aimed to improve access to grade-level curriculum for students with disabilities (SWD). Current conceptualizations of access posit that it is evidenced by students' academic outcomes. In a meta-analysis of 180 effect sizes from 23 studies, we examined access as outcomes by estimating the size of the gap in reading achievement between students with and without disabilities. Findings indicated that SWDs performed 1.17 standard deviations, or more than 3 years, below typically developing peers. The reading gap varied by disability label but not by other student and assessment characteristics. We discuss implications for access to grade-level curriculum and potential reasons for why the achievement gap is so large despite existing policies.

### **The Effects of a Paraphrasing Intervention on Word Problem-Solving Accuracy of English Learners at Risk of Mathematic Disabilities**

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Kong, J. E., & Swanson, H. L. (2019). The effects of a paraphrasing intervention on word problem-solving accuracy of English learners at risk of mathematic disabilities. *Learning Disability Quarterly*, 42(2), 92–104. <https://doi.org/10.1177/0731948718806659>

English learners (ELs) experience difficulty with mathematical problem solving because word problems require complex processes beyond basic math skills, such as the use of linguistic information, identifying relevant information, and constructing the appropriate problem statement. This study used a combined multiple baseline design and criterion changing design to assess the effectiveness of a paraphrasing intervention on the problem-solving performance for nine third-grade students who are ELs and at risk of mathematical disabilities (MD). Although the magnitude of the Tau-U effect sizes was in the small range, the visual analysis indicated that all students displayed increasing trends in problem-solving accuracy as a function of the paraphrasing intervention. The results were discussed in terms of providing continual support toward maintaining intervention outcomes.

### **Integrating Intensive Intervention into Special Education Services: Guidance for Special Education Administrators**

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Lemons, C. J., Sinclair, A. C., Gesel, S., Gandhi, A. G., & Danielson, L. (2019). Integrating intensive intervention into special education services: Guidance for special education administrators. *Journal of Special Education Leadership*, 32(1), 29–38. <https://files.eric.ed.gov/fulltext/EJ1274929.pdf>

Special education administrators at both the district and school level are serving in critical roles that uniquely position them to improve academic and behavioral outcomes of students with disabilities by ensuring the special education teachers under their supervision are prepared to deliver an evidence-based form of intensive intervention--data-based individualization. This manuscript reports lessons learned from the National Center on Intensive Intervention's first 5 years of providing technical assistance to 26 schools. School staff received training and ongoing support to integrate intensive intervention into their service delivery models. Lessons learned focus on establishing a core implementation team, examining the current state of intervention efforts, starting with a focused pilot project, targeting professional development efforts, and establishing documented procedures and intervention plans. Guidance for special education

administrators to get started with the integration of data-based individualization into special education services is provided.

### **Data-Based Individualization in Reading: Tips for Successful Implementation**

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Lindstrom, E. R., Gesel, S. A., & Lemons, C. J. (2019). Data-based individualization in reading: Tips for successful implementation. *Intervention in Schools and Clinic*, 55(2), 113–119. <https://doi.org/10.1177/1053451219837634>

Students with severe and persistent academic or behavioral challenges may benefit from data-based individualization (DBI). Starting with an evidence-based standard protocol and systematic progress monitoring, teachers can evaluate growth and implement individualized interventions to meet students' needs. Specifically, this article addresses the systematic use of student data to determine content and pacing for intensive reading instruction. Insights from implementing this approach with struggling first grade readers in Tier 3 of an RTI framework are provided. Evidence-based standard protocols, strategic data collection and management, and team collaboration are crucial elements for successful implementation.

### **Teacher Implementation and Intensification of Behavior Supports Within and Across Tiers: Introduction to the Special Issue**

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Lloyd, B. P., & Wehby, J. H. (2019). Teacher implementation and intensification of behavior supports within and across tiers: Introduction to the special section. *The Elementary School Journal*, 119(4), 535–541. <https://doi.org/10.1086/703105>

No published abstract.

### **Executive Functions and Response to Intervention: Identification of Students Struggling With Reading Comprehension**

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Miciak, J., Cirino, P. T., Ahmed, Y., Reid, E., & Vaughn, S. (2019). Executive functions and response to intervention: Identification of students struggling with reading comprehension. *Learning Disability Quarterly*, 42(1), 17–31. <https://doi.org/10.1177/0731948717749935>

Inadequate responders demonstrate significant risk for learning disabilities. Previous investigations of the cognitive profiles of inadequate and adequate responders have not included measures of executive functions (EFs), which have well-documented associations to reading comprehension. We evaluated EF performance on a common factor comprised of shared variance across tasks as well as five separable EF factors in the context of an intensive reading intervention for struggling fourth graders. To determine whether EF performance at pretest is associated with subsequent responder status, we compared EF performance of three subgroups of students: inadequate and adequate responders and typical students not at risk for reading disabilities. Results of discriminant function analyses and linear regression models comparing groups were largely null; EF performance at pretest demonstrated only small associations with responder status. These results suggest that the assessment of EF may have limited value in predicting which individual students will respond to intensive reading interventions.

## **Defining Summer Gain Among Elementary Students with or at Risk for Reading Disabilities**

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Reed, D. K., Aloe, A. M., Reeger, A. J., & Folsom, J. S. (2019). Defining summer gain among elementary students with or at risk for reading disabilities. *Exceptional Children*, 85(4), 413–431. <https://doi.org/10.1177/0014402918819426>

Summer reading programs are a form of extended school year services for students in special education. However, previous studies have not reported including high percentages of participants in special education, nor have studies sufficiently controlled for selection bias. This study combined propensity score weighting with partially clustered models to examine the effects of a summer reading program on the growth in reading skills of K–4 students, roughly 50% to 75% of whom were in special education. Results suggest that students in most grades improved on some but not all skills. However, fewer improvements were apparent when participating students were compared with peers via propensity score analyses. In addition, Grade 3 students in the control group outperformed their peers who attended summer school.

## **Fidelity of Implementation in the Field of Learning Disabilities**

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Sanetti, L. M. H., & Luh, H.-J. (2019). Fidelity of implementation in the field of learning disabilities. *Learning Disability Quarterly*, 42(4), 204–216. <https://doi.org/10.1177/0731948719851514>

Decades of research and billions of dollars have been spent to develop and evaluate evidence-based interventions and develop multitiered systems of support (MTSS) toward the goal of more effectively delivering interventions and improving student outcomes. Available evidence, however, suggests interventions are often adopted slowly and delivered with poor fidelity, resulting in uninspiring outcomes for students. The field of implementation science has emerged to address the science-to-practice gap in human service sectors (e.g., education) as a way of improving service recipient (e.g., student) outcomes. For the considerable investment in school-based intervention development and evaluation to have a significant public health impact for students, educators must integrate key findings from implementation science into their practice and research. Toward this end, the purpose of this article is four-fold. First, it overviews implementation science and implementation theories, models, and frameworks. Second, it discusses the relevance of implementation science and fidelity to both the systems-level implementation of MTSS and individual-level implementation of interventions to students with learning disability (LD). Third, it reviews the unique legal aspects related to service implementation for students with LD and the gap between state-level mandates and available science. Finally, it provides additional resources and recommendations for readers.

## **Case in Point: Special Education Administration: What Does it Take**

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Strong, J. E. (2019). Case in point: Special education administration: What does it take. *Journal of Special Education Leadership*, 32(1), 57–59.

The article discusses the leadership competencies needed to be a successful special education administrator. Topics covered include the implementation of data-based intervention (DBI), the

use of professional learning communities (PLC), and the professional preparation standards for special education teachers and administrators, developed by the Council for Exceptional Children (CEC).

### **Expanding Curriculum-Based Measurement in Written Expression for Middle School**

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Truckenmiller, A. J., McKindles, J. V., Petscher, Y., Eckert, T. L., & Tock, J. (2019). Expanding curriculum-based measurement in written expression for middle school. *The Journal of Special Education*, 54(3), 113–145. <https://doi.org/10.1177/0022466919887150>

This study provides significant advances in the understanding and utility of writing assessment for progress monitoring writing instruction. We explored the validity of a new writing tool that asks students in Grades 3 through 8 to read and respond to informational passages. The written response is then scored for writing fluency. Results indicated that students' writing fluency facilitated their writing quality and predicted 70% to 95% of the variance in writing achievement among students in middle school and 31% of the variance in Grade 3. To further validate the use of passages in progress monitoring, we used a rigorous method (latent variable equating) to remove the measurement error due to different passages. Considerations for instructional decisions based on writing assessment, as well as limitations of the study, are discussed.

### **The Critical Role of Word Reading as a Predictor of Response to Intervention**

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Vaughn, S., Capin, P., Scammacca, N., Roberts, G., Cirino, P., & Fletcher, J. M. (2019). The critical role of word reading as a predictor of response to intervention. *Journal of Learning Disabilities*, 53(6), 415–427. <https://doi.org/10.1177/0022219419891412>

This study examines the initial word reading performance of fourth-grade struggling readers and the extent to which differing levels of word reading performance at pretest influenced their response to reading interventions. A large group of students with significant reading comprehension difficulties ( $N = 481$ ) were classified into three clusters of word reading proficiency based on their pretest performance: (a) very low, (b) low, and (c) near adequate. We examined their performance on several academic, language, and executive functioning measures at the beginning of the year and their reading comprehension performance at the beginning of year and after 1 year of reading intervention to examine how each cluster responded to instruction. Results from a discriminant function analysis indicated that performance on five pretest variables were meaningful predictors of word reading proficiency cluster membership: phonological processing, writing fluency, math calculation, math fluency, and reading efficiency and comprehension. Results also demonstrated that word reading proficiency at pretest was related to response to intervention on reading comprehension measures. Students in the very low word reading proficiency cluster showed minimal response to intervention whereas the near-adequate word reading cluster demonstrated greatest response to intervention. These results suggest word reading is a critical predictor of response to intervention for students with significant comprehension problems in the upper elementary grades and that students with the most substantial word reading problems may require more intensive and specialized treatments than students with greater word reading performance to show meaningful progress in reading.

## **How Initial Word Reading and Language Skills Affect Reading Comprehension Outcomes for Students with Reading Difficulties**

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Vaughn, S., Roberts, G., Capin, P., Miciak, J., Cho, E., & Fletcher, J. M. (2019). How initial word reading and language skills affect reading comprehension outcomes for students with reading difficulties. *Exceptional Children*, 85(2), 180–196.  
<https://doi.org/10.1177/0014402918782618>

This study examined how differences in listening comprehension and word reading at the beginning of the school year influence changes in reading comprehension for English learners (ELs) with significant reading difficulties compared to non-ELs with significant reading difficulties. The study investigated heterogeneity in response to instruction among 400 struggling readers in fourth grade (n = 183 for non-EL; n = 217 for EL) who received an intensive reading intervention. At pretest, word reading, listening comprehension, and reading comprehension were measured, and at posttest, reading comprehension was measured again. Results from moderated multiple regression analyses showed a significant three-way interaction such that reading comprehension at posttest was higher for ELs than non-ELs with similar levels of low word reading but relatively higher levels of listening comprehension. However, non-ELs outperformed ELs with similar levels of relatively high word reading and average to high listening comprehension. The findings suggest that pre-intervention skill profiles may need to be interpreted differently for ELs and non-ELs with significant reading difficulties in relation to language and literacy outcomes.

## **Effects of an Intensive Reading Intervention for Ninth-Grade English Learners with Learning Disabilities**

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Williams, K. J., & Vaughn, S. (2019). Effects of an intensive reading intervention for ninth-grade English learners with learning disabilities. *Learning Disability Quarterly*, 43(3), 154-166.  
<https://doi.org/10.1177/0731948719851745>

English learners with learning disabilities (LD) have well-documented difficulties comprehending text. This study examined the effects of an intensive reading intervention (Reading Intervention for Adolescents [RIA]) on reading outcomes (word reading, vocabulary, and comprehension) for ninth-grade ELs with LD (n = 85). In the RIA, students received instruction in advanced word study, fluency, vocabulary, and comprehension. Participants assigned to RIA received the intervention for the entire ninth-grade school year for approximately 3.75 to 4.25 hr a week, whereas students in the comparison condition participated in elective courses. After using analysis of covariance to test for treatment effects and controlling for false discovery rate, there were no significant differences between the two groups except on the proximal vocabulary measure (g = 0.41). Small, nonsignificant effects were observed on measures of word reading and sentence-level comprehension, and Hedges' g values ranged from 0.08 to 0.18. Findings reveal the challenges of improving reading outcomes for English learners with learning disabilities in high school.

## **Implementation of Promising Practices that Support Students With Emotional and Behavioral Disorders**

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Zaheer, I., Maggin, D., McDaniel, S., McIntosh, K., Rodriguez, B. J., & Fogt, J. B. (2019). Implementation of promising practices that support students with emotional and behavioral disorders. *Behavioral Disorders, 44*(2), 117–128. <https://doi.org/10.1177/0198742918821331>

Students with or at-risk for emotional and behavioral disorders pose an immense challenge for educators, and typical practices to address them are punitive and exclusionary, leading to poor academic and social outcomes for students. To address the complex needs of students with intensive emotional and behavioral needs, evidence-based practices and strategies that have been validated through rigorous research are needed. In this article, we describe evidence-based practices for creating positive and effective classrooms environments as well as illustrate implementation factors that are key to successful and sustained use of evidence-based practices in school settings.

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### **Essentials of Intensive Intervention**

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Zumeta Edmonds, R., Gandhi, A. G., & Danielson, L. (Eds.). (2019). *Essentials of intensive intervention*. New York, NY: Guilford Press.

No published abstract.

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### **I'm Not Throwing Away My Shot: What Alexander Hamilton Can Tell Us About Standard Reading Interventions**

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Al Otaiba, S., Petscher, Y., Wanzek, J., Lan, P., & Rivas, B., (2018). I'm not throwing away my shot: What Alexander Hamilton can tell us about standard reading intervention. *Learning Disabilities Research & Practice, 33*(3), 156–167. <https://doi.org/10.1111/ldrp.12179>

This article summarizes findings from a two-year randomized control trial, focusing on a subset of 194 fourth graders with reading comprehension scores at or below the 15th percentile. Students in the treatment condition received an average of 94 daily 30-min sessions of small group intervention implemented with fidelity by well-trained research staff. Standardized measures of word identification, vocabulary, and comprehension, and an oral reading fluency measure were administered pre- and post-testing. Results indicated no statistically significant differences between students in the treatment or business-as-usual conditions; effect sizes for comprehension were small (0.14 and 0.19); a quantile regression, however, revealed slightly larger effect sizes for students at the 0.25 to 0.50 quantiles. The effect sizes for word identification, fluency, and vocabulary were less than 0.05. We discuss implications of the study, as well as limitations and directions for future research. We conclude with recommendations for intensifying interventions.

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### **Elementary Grade Intervention Approaches to Treat Specific Learning Disabilities, Including Dyslexia**

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Al Otaiba, S., Rouse, A. G., & Baker, K. (2018). Elementary grade intervention approaches to treat specific learning disabilities, including dyslexia. *Language, Speech & Hearing Services in Schools*, 49(4), 829–842. [https://doi.org/10.1044/2018\\_LSHSS-DYSLC-18-0022](https://doi.org/10.1044/2018_LSHSS-DYSLC-18-0022)

The purpose of this narrative review of the literature is to provide a description of intensive interventions for elementary grade students with dyslexia, students with learning disabilities, and students with intensive reading and writing needs. Method: First, we provide a brief overview of response to intervention. Second, we explain our theoretical framework for the review. Third, we describe evidence-based interventions, which are divided into predominantly reading or writing interventions. Fourth, we explain data-based individualization for these programs based on a taxonomy of intensity, and we provide an illustrative case study. Conclusion: We conclude by describing a set of links to websites and technical assistance resources that may be helpful for speech-language pathologists, teachers, and other interventionists to stay current with this research base and to lead professional learning communities.

### **Adapting a Sentence Intervention with Spelling and Handwriting Support for Elementary Students With Writing Difficulties: A Preliminary Investigation**

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Datchuk, S. M., & Dembek, G. A. (2018). Adapting a sentence intervention with spelling and handwriting support for elementary students with writing difficulties: A preliminary investigation. *Insights into Learning Disabilities*, 15(1), 7–27. <https://files.eric.ed.gov/fulltext/EJ1182861.pdf>

Difficulties with two critical transcription skills, handwriting and spelling, can hinder acquisition and use of simple sentences during writing for elementary students. This preliminary investigation used a framework of data-based individualization to adapt and study effects of a multi-component intervention designed to teach simple sentence construction. Two adaptations to the intervention included a modified form of cover-copy-compare procedures for spelling difficulties and extended time for handwriting difficulties. Intervention was delivered across two small groups of elementary students at-risk for or with identified learning disabilities. All students showed gains in simple sentence construction; however, results must be viewed with caution given high variability for some students in performance and several design limitations.

### **Examining the Impact and School-Level Predictors of Impact Variability of an 8th Grade Reading Intervention on At-Risk Students' Reading Achievement**

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Fien, H., Anderson, D., Nelson, N. J., Kennedy, P., Baker, S. K., & Stoolmiller, M. (2018). Examining the impact and school-level predictors of impact variability of an 8th grade reading intervention on at-risk students' reading achievement. *Learning Disabilities Research & Practice*, 33(1), 37–50. <https://doi.org/10.1111/ldrp.12161>

The purpose of the present article is to report on a large-scale investigation of six school districts' implementation of an initiative aimed at reducing dropout rates by improving reading achievement in the middle grades. Data for the Middle School Intervention Project (MSIP) were collected in 25 middle schools across the state of Oregon. We examined (a) the degree to which the schools improved reading achievement for struggling readers in 8th grade, and (b) whether we could account for school differences in the treatment effect through measured explicit and



intensive intervention factors. At the end of 8th grade there was no evidence of significant or positive effects on the two primary reading outcome measures.

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### **Decisions, Decisions, Decisions: Using Data to Make Instructional Decisions for Struggling Readers**

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Filderman, M. J., & Toste, J. R. (2018). Decisions, decisions, decisions: Using data to make instructional decisions for struggling readers. *TEACHING Exceptional Children*, 50(3), 130–140. <https://doi.org/10.1177/0040059917740701>

No published abstract.

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### **Data-Based Decision Making in Reading Interventions: A Synthesis and Meta-Analysis of the Effects for Struggling Readers**

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Filderman, M. J., Toste, J. R., Didion, L. A., Peng, P., & Clemens, N. H. (2018). Data-based decision making in reading interventions: A synthesis and meta-analysis of the effects for struggling readers. *The Journal of Special Education*, 52(3), 174–187. <https://doi.org/10.1177/0022466918790001>

For students with persistent reading difficulties, research suggests one of the most effective ways to intensify interventions is to individualize instruction through use of performance data—a process known as data-based decision making (DBDM). This article reports a synthesis and meta-analysis of studies of reading interventions containing DBDM for struggling readers, as well as the characteristics and procedures that support the efficacy of these interventions. A systematic search of peer-reviewed literature published between 1975 and 2017 was conducted, resulting in 15 studies of reading interventions that incorporated DBDM for struggling readers in Grades K–12. A comparison of students who received reading interventions with DBDM with those in business-as-usual (BAU) comparison groups yielded a weighted mean effect of  $g = .24$ , 95% confidence interval (CI) = [.01 to .46]. A subset of six studies that compared students receiving similar reading interventions with and without DBDM yielded a weighted mean effect of  $g = .27$ , 95% CI = [.07, .47]. Implications for DBDM in reading interventions for struggling readers and areas for future research are described. In particular, experimental investigation is necessary to establish DBDM as an evidence-based practice for struggling readers.

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### **Students with Disabilities’ Abysmal School Performance: An Introduction to the Special Issue**

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Fuchs, D., Fuchs, L. S., McMaster, K. L., & Lemons, C. J. (2018). Students with disabilities’ abysmal school performance: An introduction to the special issue. *Learning Disabilities Research & Practice*, 33(3) 127–130. <https://doi.org/10.1111/ldrp.12180>

The academic achievement of millions of American children is abysmal. For clarity’s sake, the 2018 on-line edition of the Merriam-Webster dictionary says that the word “abysmal” means low or wretched, extremely poor or bad. Many of America’s poorly-achieving students have

significant learning or behavior disabilities. We discuss below some of the evidence of their gross underachievement and attempt to explain how come.

### **Effects of Data-Based Individualization for Students with Intensive Learning Needs: A Meta-Analysis**

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Jung, P., McMaster, K. L., Kunkel, A. K., Shin, J., & Stecker, P. M. (2018). Effects of data-based individualization for students with intensive learning needs: A meta-analysis. *Learning Disabilities Research & Practice, 33*(3), 144–155. <https://doi.org/10.1111/ldrp.12172>

We examined the mean effect of teachers' use of data-based individualization (DBI) on the performance of students with intensive learning needs across academic areas and factors influencing the effects of DBI on student achievement. A total of 57 effect sizes from 14 studies were categorized into two comparisons: DBI Only (comparisons between DBI and a business-as-usual control) and DBI Plus (comparisons in which DBI implementers had access to additional information on student performance while they implemented DBI, compared to a control). The mean effect of DBI Only on student performance was  $g = 0.37$ ; the mean effect of DBI Plus was  $g = 0.38$ . Differential effects of DBI were found depending on the nature of CBM tasks, frequency of CBM administration, and type and frequency of supports provided to teachers. Findings support the use of DBI to enhance student outcomes across academic areas.

### **Professional Development for Data-Based Instruction in Early Writing: Tools, Learning, and Collaborative Support**

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Lembke, E. S., McMaster, K. L., Smith, R. A., Allen, A., Brandes, D., & Wagner, K. (2018). Professional development for data-based instruction in early writing: Tools, learning, and collaborative support. *Teacher Education and Special Education, 41*(2), 106–120. <https://doi.org/10.1177/0888406417730112>

Few teachers receive adequate preparation to provide effective individualized instruction for children with intensive early writing needs. In this article, the authors describe an attempt to close this learning gap, by developing Data-Based Instruction-Tools, Learning, and Collaborative Support (DBI-TLC), a comprehensive professional development (PD) system that provides tools, learning opportunities, and ongoing collaborative supports for teachers to implement DBI in early writing. They describe the theoretical framework that has guided this work, the teacher population with whom they worked, their approach to assessing important teacher outcomes, and their development process. They highlight key findings that align with their theory of change and discuss implications for further research and teacher preparation.

### **Envisioning an Improved Continuum of Special Education Services for Students with Learning Disabilities: Considering Intervention Intensity**

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Lemons, C. J., Vaughn, S., Wexler, J., Kearns, D. M., & Sinclair, A.C. (2018). Envisioning an improved continuum of special education services for students with learning disabilities: Considering intervention intensity. *Learning Disabilities Research & Practice, 33*(3), 131–143. <https://doi.org/10.1111/ldrp.12173>

In *Endrew F. v Douglas County School District RE-1*, the U.S. Supreme Court affirmed the requirement that schools provide special education services designed to confer educational benefit that is more than de minimis. *Endrew* offers an opportunity for the special education community to consider whether students with learning disabilities have access to a full continuum of services, including individualized, data-driven, and intensive interventions. We examine predominant models of service delivery, highlight concerns that these are insufficient, and envision an improved continuum of services better aligned with the raised expectations of *Endrew*. We also highlight important barriers that need to be addressed before an improved continuum can be implemented in many schools in the United States.

### **The Effects of One Versus Two Years of Intensive Reading Intervention Implemented with Late Elementary Struggling Readers**

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Miciak, J., Roberts, G., Taylor, W. P., Solis, M., Ahmed, Y., Vaughn, S., & Fletcher, J. M. (2018). The effects of one versus two years of intensive reading intervention implemented with late elementary struggling readers. *Learning Disabilities Research & Practice, 33*(1), 24–36. <https://doi.org/10.1111/ldrp.12159>

We examined the effectiveness of a researcher-provided reading intervention with 484 fourth graders with significant reading difficulties. Students were randomly assigned to one year of intervention, two years of intervention, or a business-as-usual comparison condition (BAU). Students assigned to two years of intervention demonstrated significantly greater gains in reading fluency compared to students who received one year of intervention and the BAU group. Students in both the one- and two-year groups demonstrated similar and significantly larger gains in word reading in comparison to the BAU group. There were no statistically significant differences between the three groups on standardized measures of reading comprehension. We discuss these results in the context of research with late elementary and secondary students targeting reading comprehension.

### **Teachers for Inclusive, Diverse Urban Settings**

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Reese, L., Richards-Tutor, C., Hansuvadha, N., Pavri, S., & Xu, S. (2018). Teachers for inclusive, diverse urban settings. *Issues in Teacher Education, 27*(1), 17–27. <https://files.eric.ed.gov/fulltext/EJ1174905.pdf>

In this article, the authors discuss the creation of an Urban Dual Credential Program (UDCP) at a large, comprehensive state university in California, a program meant to prepare dually-certified teachers in general education (California Multiple Subject Credential) and special education (California Education Specialist Credential in mild/moderate disabilities) to work with and meet the needs of culturally and linguistically diverse students, including those with special needs, in urban settings. In California alone, according to December 2012 figures, approximately 700,000 of California's school-age population were identified with a disability, and of these children, 73% were from culturally and linguistically diverse backgrounds (CBEDS, 2014). Through coursework and clinical practice in local elementary school sites, participating candidates in the UDCP acquire the knowledge and skills to implement research-based, culturally responsive, and

inclusive instructional practices, specifically multi-tiered systems of support (MTSS; See National Center for Intensive Intervention; <http://www.intensiveintervention.org/ncii-glossary-terms#MTSS>). The focus here is on the design of language arts methods courses in the program.

### **Intensive Intervention for Students with Emotional and Behavioral Disorders**

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Smith, S. W., Poling, D. V., & Worth, M. R. (2018). Intensive intervention for students with emotional and behavioral disorders. *Learning Disabilities Research & Practice, 33*(3), 168–175. <https://doi.org/10.1111/ldrp.12174>

School professionals may provide behavioral support for students using a tiered framework of intervention. Students who display problem behaviors and sustained resistance to interventions within these tiers may require special education services under the category of emotional and behavioral disorders. By the time students receive special education services, they will have experienced changes in intervention intensity, such as increased behavioral reinforcement or modification of functional assessment-informed individualized behavior plans. Yet, simply intensifying interventions quantitatively (more frequent reinforcement or progress monitoring) may not increase sufficiently students' abilities to function successfully in school, because their needs may require behavioral and social-emotional skills instruction. Evidence highlights the importance of skill-based instruction that is sequenced, active, focused, and explicit. Therefore, after discussing current educational practices, we describe an intensive intervention that is responsive to student behavioral excesses and deficits through explicit skill instruction delivered through special education services, and consider research and practice implications.

### **Word Study Intervention for Students with ASD: A Multiple Baseline Study of Data-Based Individualization**

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Solís, M., El Zein, F., Black, M., Miller, A., Therrien, W. J., & Invernizzi, M. (2018). Word study intervention for students with ASD: A multiple baseline study of data-based individualization. *Education and Training in Autism and Developmental Disabilities, 53*(3), 287–298. <https://www.jstor.org/stable/26563469>

This multiple baseline across participants study examined the efficacy of a data-based individualization word study intervention for students with autism spectrum disorder (N = 5) and low word reading skills. An experienced interventionist provided 1:1 word reading instruction in 30-minute sessions five times per week for an average of 10 sessions per participant. Intervention effects for directly taught words and words with similar spelling patterns were estimated using visual analysis and calculation of mean differences across baseline and intervention phases. Results indicate immediate and consistent improvements in word reading outcomes across all participants.

### **Current Evidence on the Effects of Intensive Early Reading Interventions**

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Wanzek, J., Stevens, E. A., Williams, K. J., Scammacca, N., Vaughn, S., & Sargent, K. (2018). Current evidence on the effects of intensive early reading interventions. *Journal of Learning Disabilities, 51*(6), 612–624. <https://doi.org/10.1177/0022219418775110>

Many students at risk for or identified with reading disabilities need intensive reading interventions. This meta-analysis provides an update to the Wanzek and Vaughn synthesis on intensive early reading interventions. Effects from 25 reading intervention studies are analyzed to examine the overall effect of intensive early reading interventions as well as relationships between intervention and student characteristics related to outcomes. The weighted mean effect size (ES) estimate (ES = 0.39), with a mean effect size adjusted for publication bias (ES = 0.28), both significantly different from zero, suggested intensive early reading interventions resulted in positive outcomes for early struggling readers in kindergarten through third grades. There was no statistically significant or meaningful heterogeneity in the study-wise effect sizes. Exploratory examination of time in intervention, instructional group size, initial reading achievement, and date of publication are provided.

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### **Toward More Effective Tiered Systems: Lessons from National Implementation Efforts**

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Arden, S. V., Gandhi, A. G., Zumeta Edmonds, R., & Danielson, L. (2017). Toward more effective tiered systems: Lessons from national implementation efforts. *Exceptional Children*, 83(3), 269–280. <https://doi.org/10.1177/0014402917693565>

Based on the 2015 evaluation of response-to-intervention (RTI) efforts and our own 2 decades of experience in supporting educators' implementation of RTI efforts, four recommendations are presented to advance effective implementation of tiered systems of intervention. We suggest that by (a) assessing readiness and capacity, (b) providing content and coaching as part of professional development, (c) using evaluation data, and (d) including students with disabilities, educators can make strides to implement RTI more effectively and help to meet the needs of all students in today's schools.

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### **Data-Based Decision Making in Multi-Tiered Systems of Support: Principles, Practices, Tips, & Tools**

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Arden, S. V., & Pentimonti, J. M. (2017). Data-based decision making in multi-tiered systems of support: Principles, practices, tips, & tools. *Perspectives on Language & Literacy*, 43(4), 19–23.

No published abstract.

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### **Intensive Reading Interventions for Inadequate Responders in Grades K–3: A Synthesis**

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Austin, C. R., Vaughn, S., & McClelland, A. M. (2017). Intensive reading interventions for inadequate responders in grades K–3: A synthesis. *Learning Disability Quarterly*, 40(4), 191–210. <https://doi.org/10.1177/0731948717714446>

A subset of students failed to respond adequately to reading interventions. This synthesis systematically reviews studies in which students in grades K–3 responded inadequately to a Tier 2 reading intervention and were provided with a Tier 3 intervention. Descriptions of the Tier 3 reading interventions and effects are provided. To meet inclusion criteria, studies were required to (a) provide documented, multi-tiered reading interventions with at least one reading outcome

measured; (b) include students in grades K–3 who previously responded inadequately to a Tier 2 intervention; (c) use experimental, quasi-experimental, or multiple-group designs; and (d) be peer reviewed and conducted in English. Twelve studies met inclusion criteria. Results demonstrate that students who responded inadequately to Tier 2 interventions can make significant growth from Tier 3 interventions compared with a control group of peers who were also inadequate responders, but often fail to catch up to their more responsive peers.

### **Impact of Intensive Summer Reading Intervention for Children with Reading Disabilities and Difficulties in Early Elementary School**

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Christodoulou, J. A., Cyr, A., Murtagh, J., Chang, P., Lin, J., Guarino, A. J., ... & Gabrieli, J. D. E. (2017). Impact of intensive summer reading intervention for children with reading disabilities and difficulties in early elementary school. *Journal of Learning Disabilities, 50*(2), 115–127. <https://doi.org/10.1177/0022219415617163>

Efficacy of an intensive reading intervention implemented during the nonacademic summer was evaluated in children with reading disabilities or difficulties (RD). Students (ages 6–9) were randomly assigned to receive Lindamood-Bell’s Seeing Stars program (n = 23) as an intervention or to a waiting-list control group (n = 24). Analysis of pre- and posttesting revealed significant interactions in favor of the intervention group for untimed word and pseudoword reading, timed pseudoword reading, oral reading fluency, and symbol imagery. The interactions mostly reflected (a) significant declines in the nonintervention group from pre- to posttesting, and (2) no decline in the intervention group. The current study offers direct evidence for widening differences in reading abilities between students with RD who do and do not receive intensive summer reading instruction. Intervention implications for RD children are discussed, especially in relation to the relevance of summer intervention to prevent further decline in struggling early readers.

### **What Do Beginning Special Educators Need to Know About Intensive Reading Interventions?**

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Coyne, M. D., & Koriakin, T. A. (2017). What do beginning special educators need to know about intensive reading interventions? *TEACHING Exceptional Children, 49*(4), 239–248. <https://doi.org/10.1177/0040059916688648>

No published abstract.

### **A Direct Instruction and Precision Teaching Intervention to Improve the Sentence Construction of Middle School Students with Writing Difficulties**

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Datchuk, S. M. (2017). A direct instruction and precision teaching intervention to improve the sentence construction of middle school students with writing difficulties. *The Journal of Special Education, 51*(2), 62–71. <https://doi.org/10.1177/0022466916665588>

Being able to construct simple sentences is necessary for effective written expression. The present study investigated effects of a sentence construction intervention on small groups of middle school students with disabilities and writing difficulties. The intervention entailed sentence instruction and frequency building to a performance criterion, a type of timed practice

emphasizing fluency. A single case design, multiple-baseline across small groups, was used. Three middle school teachers delivered intervention to three small groups of students (a total of 15 students). As a result of intervention, the average number of correct minus incorrect word sequences per small group gradually increased. Results are discussed in the context of the sentence construction literature and within a framework of direct instruction and precision teaching.

### **Data-Based Decision-Making: Developing a Method for Capturing Teachers' Understanding of CBM Graphs**

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Espin, C. A., Wayman, M. M., Deno, S. L., McMaster, K. L., & Rooij, M. (2017). Data-based decision-making: Developing a method for capturing teachers' understanding of CBM graphs. *Learning Disabilities Research & Practice, 32*(1), 8–21. <https://doi.org/10.1111/ldrp.12123>

In this special issue, we explore the decision-making aspect of data-based decision-making. The articles in the issue address a wide range of research questions, designs, methods, and analyses, but all focus on data-based decision-making for students with learning difficulties. In this first article, we introduce the topic of data-based decision-making and provide an overview of the special issue. We then describe a small, exploratory study designed to develop a method for studying teachers' understanding and interpretation of Curriculum-Based Measurement (CBM) graphs. Specifically, we examine whether think-alouds scored for coherence, specificity, reflectivity, and accuracy differentiate teachers with more or less understanding of CBM data. We conclude the article by discussing the importance of, and the need for, research on teachers' understanding, interpretation, and use of data for instructional decision-making.

### **Critique of the National Evaluation of Response to Intervention: A Case for Simpler Frameworks**

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Fuchs, D., & Fuchs, L. S. (2017). Critique of the national evaluation of response to intervention: A case for simpler frameworks. *Exceptional Children, 83*(3), 255–268. <https://doi.org/10.1177/0014402917693580>

In 2010, the Institute of Education Sciences commissioned a much-needed national evaluation of response to intervention (RTI). The evaluators defined their task very narrowly, asking “Does the use of universal screening, including a cut-point for designating students for more intensive Tier 2 and Tier 3 interventions, increase children’s performance on a comprehensive reading measure?” Their regression-discontinuity analysis showed that first-grade children designated for (but not necessarily receiving) more intensive intervention in the 146 study schools performed significantly worse than children not designated for it. There were no reliable differences between designated and nondesignated students in Grades 2 or 3. The provocativeness of these findings notwithstanding, the evaluation’s focus and design weakens its importance. RTI implementation data were also collected in the 146 study schools. These data suggest many of them were not conducting RTI in a manner supported by research and policy. Such findings and others’ evaluations of RTI advance the idea that simpler frameworks may encourage more educators to implement RTI’s most important components with fidelity.

## **The Taxonomy of Intervention Intensity**

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Fuchs, L. S., Fuchs, D., & Malone, A. S. (2017). The taxonomy of intervention intensity. *TEACHING Exceptional Children*, 50(1), 35-43. <https://doi.org/10.1177/0040059918758166>

No published abstract.

## **Beyond Reading: The Less Addressed Aspects of Research in Learning Disabilities—Introduction to the Special Issue**

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Gersten, R., Harris, K. R., & Mason, L. H. (2017). Beyond reading: The less addressed aspects of research in learning disabilities—Introduction to the special issue. *Learning Disabilities Research & Practice*, 32(3), 137–139. <https://doi.org/10.1111/ldrp.12145>

No published abstract.

## **Curriculum-Based Measurement of Reading Growth: Weekly Versus Intermittent Progress Monitoring**

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Jenkins, J., Schulze, M., Marti, A., & Harbaugh, A. G. (2017). Curriculum-based measurement of reading growth: Weekly versus intermittent progress monitoring. *Exceptional Children*, 84(1), 42–54. <https://doi.org/10.1177/0014402917708216>

We examined the idea that leaner schedules of progress monitoring (PM) can lighten assessment demands without undermining decision-making accuracy. Using curriculum-based measurement of reading, we compared effects on decision accuracy of 5 intermittent PM schedules relative to that of every-week PM. For participating students with high-incidence disabilities—all receiving special education reading instruction (N = 56)—intermittent schedules of PM performed as well as every-week PM. These findings signal a need for research on the relative accuracy and timeliness of curriculum-based measurement decision making for intermittent and weekly PM.

## **Effects of Early Writing Intervention Delivered within a Data-Based Instruction Framework**

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Jung, P. G., McMaster, K. L., & DelMas, R. C. (2017). Effects of early writing intervention delivered within a data-based instruction framework. *Exceptional Children*, 83(3), 281–297. <https://doi.org/10.1177/0014402916667586>

We examined effects of research-based early writing intervention delivered within a data-based instruction (DBI) framework for children with intensive needs. We randomly assigned 46 students with and without disabilities in Grades 1 to 3 within classrooms to either treatment or control. Treatment students received research-based early writing intervention within a DBI framework for 30 min, 3 times per week, for 12 weeks. Control students received business-as-



usual writing instruction. We measured writing performance using curriculum-based measures (CBM) and Woodcock Johnson III Tests of Achievement (WJ III). We found significant treatment effects on CBM outcomes (Hedges  $g = 0.74$  to  $1.36$ ). We also found a significant interaction between special education status and condition on the WJ III favoring treatment students with disabilities (Hedges  $g = 0.45$  to  $0.70$ ). Findings provide preliminary support for using a combination of research-based intervention and DBI with students with intensive writing needs.

### **The Selection and Use of Screening and Progress Monitoring Tools in Data-Based Decision Making Within an MTSS Framework**

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Pentimonti, J. M., Walker, M. A., & Edmonds, R. Z. (2017). The selection and use of screening and progress monitoring tools in data-based decision making within an MTSS framework. *Perspectives on Language and Literacy*, 43(3), 34–40.

No published abstract.

### **Big Ideas in Special Education: Specially Designed Instruction, High-Leverage Practices, Explicit Instruction, and Intensive Instruction**

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Riccomini, P. J., Morano, S., & Hughes, C. A. (2017). Big ideas in special education: Specially designed instruction, high-leverage practices, explicit instruction, and intensive instruction. *TEACHING Exceptional Children*, 50(1), 20–27. <https://doi.org/10.1177/0040059917724412>

No published abstract.

### **Examining Implementation of Intensive Intervention in Mathematics**

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Schumacher, R. F., Zumeta Edmonds, R., & Arden, S. V. (2017). Examining implementation of intensive intervention in mathematics. *Learning Disabilities Research & Practice*, 32(3), 189–199. <https://doi.org/10.1111/ldrp.12141>

Promising findings from controlled research studies often fail to be transferred to and implemented in schools successfully. This problem is particularly apparent when considering implementation of evidence-based practices related to complex systems such as response to intervention (RTI) and other multitiered intervention frameworks in mathematics. This article addresses the challenges schools face when implementing intensive intervention in mathematics with a data-based individualization (DBI) framework. Preliminary findings from the first year of a formative evaluation study that addressed school-based implementation of DBI include (a) factors that impacted readiness for DBI, (b) the application of DBI at school sites, and (c) the importance of ongoing coaching and consultation. We then discuss practical implications for schools and districts when planning for intensive intervention in mathematics.

### **Using Data to Individualize a Multicomponent, Technology-Based Self-Monitoring Intervention**

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Bruhn, A. L., Vogelgesang, K., Fernando, J., & Lugo, W. (2016). Using data to individualize a multicomponent, technology-based self-monitoring intervention. *Journal of Special Education Technology, 31*(2), 64–76. <https://doi.org/10.1177/0162643416650024>

Technology in schools is abundant as is the call for evidence-based interventions for students who need additional support to be successful. One promising use of technology is for self-monitoring interventions aimed at improving classroom behavior. In this study, two middle school students with disabilities used a multicomponent, self-monitoring app on an iPad during their reading classes. Using a data-based individualization approach, teachers worked with the primary investigator to monitor students' response to the intervention and adapt the intervention accordingly. A single-subject design was used to test the effects of the intervention, and a functional relation was established for both participants who improved their academic engagement and decreased their disruptive behavior. Additionally, participants indicated the intervention was socially valid. Limitations, implications, and future directions are discussed.

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### **Intensifying Intervention for Students with Persistent and Severe Mathematics Difficulties**

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Bryant, D. P., & Bryant, B. R. (2016). Intensifying intervention for students with persistent and severe mathematics difficulties. *TEACHING Exceptional Children, 49*(2), 93–95. <https://doi.org/10.1177/0040059916676794>

No published abstract.

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### **The Effects of a Tier 3 Intervention on the Mathematics Performance of Second Grade Students with Severe Mathematics Difficulties**

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Bryant, B. R., Bryant, D. P., Porterfield, J., Dennis, M. S., Falcomata, T., Valentine, C., ... & Bell, K. (2016). The effects of a tier 3 intervention on the mathematics performance of second grade students with severe mathematics difficulties. *Journal of Learning Disabilities, 49*(2), 176–188. <https://doi.org/10.1177/0022219414538516>

The purpose of this study was to determine the effectiveness of a systematic, explicit, intensive Tier 3 (tertiary) intervention on the mathematics performance of students in second grade with severe mathematics difficulties. A multiple-baseline design across groups of participants showed improved mathematics performance on number and operations concepts and procedures, which are the foundation for later mathematics success. In the previous year, 12 participants had experienced two doses (first and second semesters) of a Tier 2 intervention. In second grade, the participants continued to demonstrate low performance, falling below the 10th percentile on a researcher-designed universal screener and below the 16th percentile on a distal measure, thus qualifying for the intensive intervention. A project interventionist, who met with the students 5 days a week for 10 weeks (9 weeks for one group), conducted the intensive intervention. The intervention employed more intensive instructional design features than the previous Tier 2 secondary instruction, and also included weekly games to reinforce concepts and skills from the lessons. Spring results showed significantly improved mathematics performance (scoring at or above the 25th percentile) for most of the students, thus making them eligible to exit the Tier 3 intervention.

## **Responsiveness-To-Intervention: A “Systems” Approach to Instructional Adaptation**

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Fuchs, D., & Fuchs, L. S. (2016). Responsiveness-to-intervention: A “systems” approach to instructional adaptation. *Theory into Practice*, 55(3), 225–233.

<https://doi.org/10.1080/00405841.2016.1184536>

Classroom research on adaptive teaching indicates few teachers modify instruction for at-risk students in a manner that benefits them. Responsiveness-To-Intervention, with its tiers of increasingly intensive instruction, represents an alternative approach to adaptive instruction that may prove more workable in today's schools.

## **Supplemental Mathematics Intervention: How and Why Special Educators Intensify Intervention for Students with Learning Disabilities**

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Hunt, J. H., Valentine, C., Bryant, D. P., Pfannenstiel, K. H., & Bryant, B. R. (2016). Supplemental mathematics intervention: How and why special educators intensify intervention for students with learning disabilities. *Remedial and Special Education*, 37(2), 78–88.

<https://doi.org/10.1177/0741932515597293>

Researchers design scripted supplemental mathematics programs for struggling students, such as students with learning disabilities (LD), to encourage an evidence-based presentation of concepts and use of instructional language in teachers' implementation. In practice, teachers may or may not implement these programs with high fidelity, resulting in slight to substantial curriculum alterations. Yet there is a dearth of studies detailing the nature of changes teachers make during instruction or their perceptions of why the changes were necessary. We present a qualitative analysis of 10 special educators' employment of a Base Ten Numeration and Multiplication/Division Strategies intervention with students with LD. Results show that teachers altered modeled practice and guided practice lesson components more than any other lesson component. Three interrelated themes illustrate reasons for pedagogy, materials, and tasks alterations: (a) scripted tasks/script, (b) connections, and (c) lesson delivery methods.

## **Using High-Probability Instructional Sequences and Explicit Instruction to Teach Multiplication Facts**

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Leach, D. (2016). Using high-probability instructional sequences and explicit instruction to teach multiplication facts. *Intervention in School and Clinic*, 52(2), 102–107.

<https://doi.org/10.1177/1053451216636062>

Students with learning disabilities often struggle with math fact fluency and require specialized interventions to recall basic facts. Deficits in math fact fluency can result in later difficulties when learning higher-level mathematical computation, concepts, and problem solving. The response-to-intervention (RTI) and multitiered-systems-of-support (MTSS) approaches for delivering research-based interventions to struggling learners provide educators with the structural frameworks necessary for planning tiered interventions to address skill deficits. Some schools have been implementing RTI/MTSS for years, while others have recently started using

these frameworks. Regardless of the number of years delivering tiered interventions, educators benefit from learning about additional interventions they can implement for students requiring tertiary supports (i.e., Tier 3). This article provides readers with a detailed explanation of a Tier 3 multiplication fact fluency intervention that involves the use of high-probability instructional sequences and explicit, systematic, intensive instruction to increase motivation and fluency development.

### **Improving Professional Development to Enhance Reading Outcomes for Students in Special Education**

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Lemons, C. J., Otaiba, S. A., Conway, S. J., & Mellado De La Cruz, V. (2016). Improving professional development to enhance reading outcomes for students in special education. *New Directions for Child and Adolescent Development*, 154, 87–104.  
<https://doi.org/10.1002/cad.20177>

The purpose of this article is to focus specifically on professional development that is needed to ensure that preservice and in-service teachers are prepared to deliver intensive intervention to enhance reading outcomes of students in special education. Our aim is to provide recommendations to ensure that special educators are prepared to design and implement data-based individualization in the area of reading. We highlight what special educators need to know to implement data-based individualization and provide recommendations for improving professional development using findings from federally funded projects. Implications for practice and next steps for research and policy are provided.

### **Intensive Interventions for Students with Emotional and Behavioral Disorders: Issues, Theory, and Future Directions**

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Maggin, D. M., Wehby, J. H., Farmer, T. W., & Brooks, D. S. (2016). Intensive interventions for students with emotional and behavioral disorders: Issues, theory, and future directions. *Journal of Emotional and Behavioral Disorders*, 24(3), 127–137.  
<https://doi.org/10.1177/1063426616661498>

The article focuses on the youth whose emotional/behavioral disorders (EBD) is a chronic condition particularly on students for whom long-term, intensive intervention will be required. It introduces the concept of intensive interventions and discusses the data-based individualization (DBI) process model. It cites 3 important gaps a model focused on individual needs of students with EBD should address including that most intervention models were validated using group-focused research methods.

### **Intensive Academic Interventions for Students With Emotional and Behavioral Disorders**

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Maggin, D. M., Wehby, J. H., & Gilmour, A. F. (2016). Intensive academic interventions for students with emotional and behavioral disorders: An experimental framework. *Journal of Emotional and Behavioral Disorders*, 24(3), 138–147.  
<https://doi.org/10.1177/1063426616649162>

Research has consistently demonstrated that students with emotional and behavioral disorders (EBD) are at risk for academic underachievement. Despite the persistent and strong association between academic problems and EBD, there remains a dearth of information on the process for developing intensive academic interventions for students with EBD. The intent of the present article is to describe and review an experimental approach for developing intensive and individualized academic interventions that provide a potentially valuable method for informing the development of academic interventions. Specifically, brief experimental analyses of academic behavior allow for the comparison of two or more interventions over a relatively short period of time. These formal comparisons provide essential information on which particular practice or set of strategies produce improved responding for the student on the particular skill of interest. The authors contextualize the brief experimental analysis methods within the data-based individualization (DBI) approach advanced by the National Center on Intensive Intervention (NCII) before reviewing recent research on the approach. Results are used to make recommendations for subsequent research and practice.

### **The Next Big Idea: A Framework for Integrated Academic and Behavioral Intensive Intervention**

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Berry Kuchle, L., Zumeta Edmonds, R., Danielson, L. C., Peterson, A., & Riley, T. T. C. (2015). The next big idea: A framework for integrated academic and behavioral intensive intervention. *Learning Disabilities Research & Practice, 30*(4), 150–158.  
<https://doi.org/10.1111/ldrp.12084>

Despite advances in evidence-based core instruction and intervention, many students with disabilities continue to achieve poor academic and behavioral outcomes. Many of these students are not sufficiently responsive to standardized programs and require more intensive, individualized supports. While many interventions and school problem-solving teams focus primarily on either academic or behavioral concerns, students with the most intensive needs often have interrelated needs in both areas. The next big idea in special education should be to merge these efforts, building upon all that we have learned about problem solving at all levels of support, to improve outcomes for these students. Data-based individualization provides a framework for integrating academic and behavioral problem solving and intervention.

### **Using Brief Experimental Analysis to Intensify Tier 3 Reading Interventions**

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Coolong-Chaffin, M., & Wagner, D. (2015). Using brief experimental analysis to intensify tier 3 reading interventions. *Learning Disabilities Research & Practice, 30*(4), 193–200.  
<https://doi.org/10.1111/ldrp.12086>

As implementation of multi-tiered systems of support becomes common practice across the nation, practitioners continue to need strategies for intensifying interventions and supports for the subset of students who fail to make adequate progress despite strong programs at Tiers 1 and 2. Experts recommend making several changes to the structure and format of instruction, however more information is needed about strategies that are individualized (i.e., matched to student need), not just intensified. One promising approach to matching student need to intervention is brief experimental analysis (BEA). This article will describe the theoretical and

empirical support for BEA, provide a model for conducting a BEA, present an example of its use, and discuss implications for future research and practice.

### **Effects of Tier 2 and Tier 3 Mathematics Interventions for Second Graders with Mathematics Difficulties**

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Dennis, M. S. (2015). Effects of tier 2 and tier 3 mathematics interventions for second graders with mathematics difficulties. *Learning Disabilities Research & Practice, 30*(1), 29–42.  
<https://doi.org/10.1111/ldrp.12051>

Two studies were conducted to examine the effects of Tier 2 and Tier 3 mathematics interventions on students with mathematics learning difficulties. In the first study, the work of Bryant et al. was replicated and expanded upon by documenting the sustained effects of a Tier 2 mathematics intervention on mathematics performance by second graders. In the second study, the Tier 2 intervention was intensified to a Tier 3 intervention through increases in two instructional features: group size and dosage. The results of the first study showed that the Tier 2 intervention improved mathematics performance for the majority of student participated in the study, and the effect of the intervention was sustained for the majority of students who responded to the Tier 2 intervention. The results of the second study showed that intensified Tier 3 intervention that involved one-on-one instruction and extended time for daily lessons may benefit students who have persistent difficulties with learning mathematics.

### **Inclusion Versus Specialized Intervention for Very-Low-Performing Students: What Does Access Mean in an Era of Academic Challenge?**

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Fuchs, L. S., Fuchs, D., Compton, D. L., Wehby, J., Schumacher, R. F., Gersten, R., & Jordan, N. C. (2015). Inclusion versus specialized intervention for very-low-performing students: What does access mean in an era of academic challenge? *Exceptional Children, 81*(2), 134–157.  
<https://doi.org/10.1177/0014402914551743>

The purpose of this analysis was to examine achievement gaps on fractions for very-low-performing students as a function of whether they receive inclusive fraction instruction or specialized fraction intervention and with the shift to Common Core State Standards (CCSS). In three randomized control trials conducted in 3 consecutive years, 203 students who scored at or below the 10th percentile in mathematics (mean standard score ~75) at the start of fourth grade were randomly assigned at the individual level to 12 weeks of inclusive fraction instruction or specialized fraction intervention. In Year 1, the fourth-grade mathematics curriculum was guided by initial state standards; in Years 2 and 3, the state was transitioning to CCSS. In each of the 3 years on each measure, results indicated significantly stronger learning and markedly smaller post-intervention achievement gaps for specialized fraction intervention than for inclusive fraction instruction. Yet, the size of achievement gaps grew over the years in both conditions, as CCSS increased the depth and challenge of the fraction curriculum and produced differentially stronger learning in not-at-risk classmates. Implications are discussed in terms of the provision of services for students with learning disabilities in the era of CCSS and the meaning of access to the general education curriculum.

## **Lessons Learned from District Implementation of Intensive Intervention: A Focus on Students with Disabilities**

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Gandhi, A. G., Vaughn, S., Stelitano, L., Scala, J., & Danielson, L. (2015). Lessons learned from district implementation of intensive intervention: A focus on students with disabilities. *Journal of Special Education Leadership*, 28(1), 39–49.

This paper reports findings from a study conducted to describe how districts, identified as high performing with respect to the academic outcomes of students with disabilities, define and implement intensive intervention. The authors selected five sites from a pool of districts after applying two methods: (a) a statistical analysis of district-level academic achievement data for students with disabilities and (b) nominations. Findings from site visits, interviews, and district data revealed that intensive intervention is a component of a multitiered system of support; instructional decisions rely on assessment and progress monitoring data; family engagement is challenging but valued; capacity building integrates intensive intervention; intensive intervention typically involves adaptations of tier two interventions; and fidelity is inconsistently monitored.

## **The Impact of a Precision Teaching Intervention on the Reading Fluency of Typically Developing Children**

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Lambe, D., Murphy, C., & Kelly, M. E. (2015). The impact of a precision teaching intervention on the reading fluency of typically developing children. *Behavioral Interventions*, 30(4), 364–377. <https://doi.org/10.1002/bin.1418>

This research investigated the efficacy of precision teaching (PT) on the reading fluency of typically developing children, aged 7–8 years. Seven participants were assigned to a PT intervention group and received 6 weeks of fluency training using Say All Fast a Minute Every Day Shuffled (SAFMEDS) fluency cards (Phase 1) and a Dolch story (Phase 2). Outcomes were measured using multiple baseline design (MBD) data, Standard Celeration Charts, and pre-intervention–post-intervention fluency scores. The MBD data show increased correct responding for PT participants from baseline to the end of each intervention phase. These improvements were maintained at a 3-week post-intervention follow-up. The MBD clearly demonstrated a replication of intervention effects across participants. The study supports prior research in this area showing that PT can lead to large and socially relevant gains in children's reading fluency.

## **Intensive Intervention in Mathematics**

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Powell, S. R., & Fuchs, L. S. (2015). Intensive intervention in mathematics. *Learning Disabilities Research & Practice*, 30, 182–192. <https://doi.org/10.1111/ldrp.12087>

Students who demonstrate persistent mathematics difficulties and whose performance is severely below grade level require "intensive intervention". Intensive intervention is an individualized approach to instruction that is more demanding and concentrated than Tier 2 intervention efforts. We present the elements of intensive intervention that teachers should consider when planning for, implementing, and monitoring intensive intervention in mathematics. Each of these elements is based on evidence from validated interventions. We also highlight strategies for intensifying instruction. We provide two examples of intensive intervention, one of which launches from a

Tier 2 intervention platform and the other which is completely generated by a teacher. We conclude with considerations for intensive intervention in mathematics.

### **Building Tier 3 Intervention for Long-Term Slow Growers in Grades 3–4: A Pilot Study**

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Sanchez, V. M., & O'Connor, R. E. (2015). Building tier 3 intervention for long-term slow growers in grades 3–4: A pilot study. *Learning Disabilities Research & Practice, 30*(4), 171–181. <https://doi.org/10.1111/ldrp.12085>

Tier 3 interventions are necessary for improving the reading performance of students who fail to respond adequately to Tier 1 general education instruction and Tier 2 supplemental reading intervention. In this pilot study, we identified 8 students in 3rd and 4th grade who had demonstrated slow response to Tier 2 reading interventions for three years. Students participated in a researcher-developed Tier 3 intervention for 8 weeks that focused on skill development in word analysis, word identification, and reading rate. In the 6 months prior to Tier 3, students were making minimal growth in reading; however, during Tier 3, the 8 students demonstrated strong growth on measures of word identification and reading rate. Although results are promising for poor readers who are difficult to remediate, several aspects of the Tier 3 intervention need further testing.

### **Building on Past Successes: Designing, Evaluating, and Providing Effective Treatments for Persons for Whom Typical Instruction is Not Effective**

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Vaughn, S. (2015). Building on past successes: Designing, evaluating, and providing effective treatments for persons for whom typical instruction is not effective. *Remedial and Special Education, 36*(1), 5–8. <https://doi.org/10.1177/0741932514543928>

This article provides an overview of my experiences in special education as a teacher and subsequently as an intervention researcher providing background on where we were in providing instruction to individuals with disabilities 40 years ago (prior to legal protections and supports) compared with the present. This article acknowledges the progress that has been made in providing opportunities for students with disabilities to participate in the educational system including greater access to the general education classroom for increasing numbers of students with disabilities. However, stakeholders including special educators have inadequately targeted academic and behavioral improvements as their goals for individuals with disabilities. This is largely because the research base for students with disabilities with intensive academic and behavior needs is underdeveloped. Several recommendations are provided including increased funding for research on individuals with persistent learning and behavior problems that addresses how to acquire a more complete knowledge base about effective intensive interventions for these students.

### **Special Education Research Advances Knowledge in Education**

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Vaughn, S., & Swanson, E. A. (2015). Special education research advances knowledge in education. *Exceptional Children, 82*(1), 11–24. <https://doi.org/10.1177/0014402915598781>



Research in special education has yielded beneficial outcomes for students with disabilities as well as typical achieving students. The authors provide examples of the valuable knowledge special education research has generated, including the elements of response to intervention (e.g., screening and progress monitoring), instructional practices such as systematic instruction and feedback, and intensive interventions designed to meet the specific learning needs of students with disabilities. They present the importance of maintaining an appropriate funding stream for research in special education to ensure that robust research findings continue to be available to the educational community to improve outcomes for students with disabilities as well as typical learners.

### **A Model of MTSS: Integrating Precision Teaching of Mathematics and a Multi-Level Assessment System in a Generative Classroom**

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Weisenburgh-Snyder, A. B., Malmquist, S. K., Robbins, J. K., & Lipshin, A. M. (2015). A model of MTSS: Integrating precision teaching of mathematics and a multi-level assessment system in a generative classroom. *Learning Disabilities--A Contemporary Journal*, 13(1), 21–41.

In the generative classroom, teachers provide well-designed learning environments that result in the combination, recombination, and reorganization of repertoires such that new untaught repertoires are likely to occur. One component that can contribute to such generativity is Precision Teaching (PT), a frequency building instructional intervention. A multi-level assessment system combined with evidence-based practices of teaching and learning can result in systematically accelerated student progress in mathematics thus enhancing RtI frameworks. Additionally, PT contributes to nourishing a Multi-tiered System of Support (MTSS) implementation by creating a common language between and amongst students, teachers, families, and administrators. In this unique blended system, the data collected by administrators, teachers, and students are continuously assessed and used to inform instruction and teacher training needs. A graphic presentation of these data on the Standard Celeration Chart (SCC) guides goal setting and interventions. This paper presents a case study detailing the rapid progress of a class of students during one academic school year using PT.

### **Implementing Intensive Intervention: How Do We Get There From Here?**

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Zumeta, R. O. (2015). Implementing intensive intervention: How do we get there from here? *Remedial and Special Education*, 36(2), 83–88.  
<https://doi.org/10.1177/0741932514558935>

Despite years of school reform intended to help students reach high academic standards, students with disabilities continue to struggle, suggesting a need for more intensive intervention as a part of special education and multi-tiered systems of support. At the same time, greater inclusion of students with disabilities in large-scale assessment, expanding knowledge of evidence-based practices, and improving assessment technology in recent decades provide important points of progress. This article summarizes this progress, notes potential areas for expansion, and suggests future implementation and policy research questions as they relate to observed challenges with provision of intensive intervention for students with disabilities.

## **Introduction to the *TEC* Special Issue on Data-Based Individualization**

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Danielson, L., & Rosenquist, C. (2014). Introduction to the *TEC* special issue on data-based individualization. *TEACHING Exceptional Children*, 46(4), 6–12.  
<https://doi.org/10.1177/0040059914522965>

No published abstract.

## **What Is Intensive Instruction and Why Is It Important?**

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Fuchs, D., Fuchs, L. S., & Vaughn, S. (2014). What is intensive instruction and why is it important? *TEACHING Exceptional Children*, 46(4), 13–18.  
<https://doi.org/10.1177/0040059914522966>

No published abstract.

## **Intensifying Interventions for Students by Identifying and Remediating Conceptual Understandings in Mathematics**

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Hunt, J. H., & Little, M. E. (2014). Intensifying interventions for students by identifying and remediating conceptual understandings in mathematics. *TEACHING Exceptional Children*, 46(6), 187–196. <https://doi.org/10.1177/0040059914534617>

No published abstract.

## **Precision Teaching**

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Johnson, K., & Street, E. M. (2014). Precision teaching. In F. K. McSweeney & E. S. Murphy (Eds.), *The Wiley Blackwell handbook of operant and classical conditioning* (pp. 581–609). Hoboken, NJ: John Wiley & Sons, Inc. <http://dx.doi.org/10.1002/9781118468135.ch23>

Precision Teaching (PT) is a monitoring, practice, and decision-making technology for improving performance of any kind. In this chapter, the authors expanded a motto developed by Ogden Lindsley (1972, 1990)—pinpoint; measure; chart; decide; try, try again—to describe the steps in the pure, general case of PT. They include: (1) specifying a learning objective or pinpoint; (2) arranging materials and procedures for learning and practicing the pinpoint, including slicing the pinpoint into smaller sub-skills as necessary; (3) timing the learner's performance and counting its frequency; (4) charting the learner's performance; (5) reviewing performance trends on the chart; and (6) making decisions about interventions as needed to improve its growth in frequency.

## **Using Data to Intensify Behavioral Interventions for Individual Students**

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Kern, L., & Wehby, J. H. (2014). Using data to intensify behavioral interventions for individual students. *TEACHING Exceptional Children*, 46(4), 45–53.  
<https://doi.org/10.1177/0040059914522970>

No published abstract.

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### **Precision Teaching**

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Koorland, M. A., & Sindelar, P. T. (2014). Precision teaching. In . In C. R. Reynolds, K. J. Vannest, & E. Fletcher-Janzen (Eds.), *Encyclopedia of special education*. Hoboken, NJ: John Wiley & Sons, Inc. <https://doi.org/10.1002/9781118660584.ese1921>

No published abstract.

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### **Data-Based Individualization in Reading: Intensifying Interventions for Students With Significant Reading Disabilities**

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Lemons, C. J., Kearns, D. M., & Davidson, K. A. (2014). Data-based individualization in reading: Intensifying interventions for students with significant reading disabilities. *TEACHING Exceptional Children*, 46(4), 20–29. <https://doi.org/10.1177/0040059914522978>

No published abstract.

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### **Intensifying Intervention: Kicking It Up a Notch**

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Ludlow, B. (2014). Intensifying intervention: Kicking it up a notch. *TEACHING Exceptional Children*, 46(4), 4. <https://doi.org/10.1177/0040059914523762>

No published abstract.

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### **Building and Sustaining Complex Systems: Addressing Common Challenges to Implementing Intensive Intervention**

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McInerney, M., Zumeta, R. O., Gandhi, A. G., & Gersten, R. (2014). Building and sustaining complex systems: Addressing common challenges to implementing intensive intervention. *TEACHING Exceptional Children*, 46(4), 54–63. <https://doi.org/10.1177/0040059914523763>

No published abstract.

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### **Using Data-Based Individualization to Intensify Mathematics Intervention for Students with Disabilities**

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Powell, S. R., & Stecker, P. M. (2014). Using data-based individualization to intensify mathematics intervention for students with disabilities. *TEACHING Exceptional Children*, 46(4), 31–37. <https://doi.org/10.1177/0040059914523735>

No published abstract.

## **Why Intensive Interventions Matter: Longitudinal Studies of Adolescents with Reading Disabilities and Poor Reading Comprehension**

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Solis, M., Miciak, J., Vaughn, S., & Fletcher, J. M. (2014). Why intensive interventions matter: Longitudinal studies of adolescents with reading disabilities and poor reading comprehension. *Learning Disability Quarterly*, 37(4), 218–229. <https://doi.org/10.1177/0731948714528806>

We describe findings from a series of longitudinal studies utilizing a response to intervention framework implemented over 3 years with students in Grades 6 through 8 with reading disabilities and poor reading comprehension. Students were identified based on reading comprehension scores in Grade 5 (n = 1,083) and then randomized to treatment or comparison conditions. Beginning in sixth grade, students assigned to intervention were provided treatment for 1, 2, or 3 years based on their response to instruction in each preceding year. Screening procedures, progress monitoring tools, tiers of instruction, and findings from each year of the study are reported. Additional studies investigating reading and behavioral outcomes through multi-level, growth modeling, and studies of the cognitive and neural correlates of inadequate response are also reported.

## **Intensive Interventions in Reading for Students with Reading Disabilities: Meaningful Impacts**

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Vaughn, S., & Wanzek, J. (2014). Intensive interventions in reading for students with reading disabilities: Meaningful impacts. *Learning Disabilities Research & Practice*, 29(2), 46–53. <https://doi.org/10.1111/ldrp.12031>

We use three data sources to build a rationale for why intensive interventions are necessary for students with pervasive reading disabilities: current data on the performance of students with disabilities on reading achievement measures over time, observation studies on students with reading disabilities in general and special education classrooms, and findings from intensive intervention studies for students with reading disabilities. Results of these data sources indicate that students with disabilities are not making progress in reading at the same rate as students without disabilities, reading instruction for students with reading disabilities is comprised of excessive amounts of low-level tasks, and findings from intensive intervention studies suggest positive impacts for students with reading disabilities. We argue that students with reading disabilities require ongoing intensive interventions that are likely to require schools to change the contexts and practices for these students.

## **Intensive Behavior Intervention: What Is It, What Is Its Evidence Base, and Why Do We Need to Implement Now?**

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Wehby, J. H., & Kern, L. (2014). Intensive behavior intervention: What is it, what is its evidence base, and why do we need to implement now? *TEACHING Exceptional Children*, 46(4), 38–44. <https://doi.org/10.1177/0040059914523956>

No published abstract.

## **Precision Teaching and Direct Instruction: Measurably Superior Instructional Technology in Schools**

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Binder, C., & Watkins, C. L. (2013). Precision teaching and direct instruction: Measurably superior instructional technology in schools. *Performance Improvement Quarterly*, 26(2), 73–115. <https://doi.org/10.1002/piq.21145>

Although educators, policymakers, business leaders, and the general public have become increasingly concerned about the “basic skills” crisis in American schools, research-based solutions have existed for over two decades in the form of measurably superior teaching methodologies: Precision Teaching and Direct Instruction. In federally validated research, each of these instructional technologies has been shown to produce far greater achievement and self-esteem among students than more traditional teaching practices, with favorable cost-benefit ratios when implemented in schools. These results have been obtained despite adverse socio-economic influences on students so often blamed for failure in the classroom. These methods have not been widely adopted, partly due to political and philosophical resistance to measurably superior instructional technology among educators.

This article provides overviews of Precision Teaching and Direct Instruction, discusses their origins and research backgrounds, cites effectiveness data, and describes how they can complement one another when used together. It provides sufficient references to the literature and pointers to existing programs to enable interested readers to learn more about each of these measurably superior educational solutions.

## **Effects of Tier 3 Intervention for Students With Persistent Reading Difficulties and Characteristics of Inadequate Responders**

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Denton, C. A., Tolar, T. D., Fletcher, J. M., Barth, A. E., Vaughn, S., & Francis, D. J. (2013). Effects of tier 3 intervention for students with persistent reading difficulties and characteristics of inadequate responders. *Journal of Educational Psychology*, 105(3), 633. <http://dx.doi.org/10.1037/a0032581>

This article describes a randomized controlled trial conducted to evaluate the effects of an intensive, individualized, Tier 3 reading intervention for second grade students who had previously experienced inadequate response to quality first grade classroom reading instruction (Tier 1) and supplemental small-group intervention (Tier 2). Also evaluated were cognitive characteristics of students with inadequate response to intensive Tier 3 intervention. Students were randomized to receive the research intervention (N = 47) or the instruction and intervention typically provided in their schools (N = 25). Results indicated that students who received the research intervention made significantly better growth than those who received typical school instruction on measures of word identification, phonemic decoding, and word reading fluency and on a measure of sentence- and paragraph-level reading comprehension. Treatment effects were smaller and not statistically significant on phonemic decoding efficiency, text reading fluency, and reading comprehension in extended text. Effect sizes for all outcomes except oral reading fluency met criteria for substantive importance; however, many of the students in the

intervention continued to struggle. An evaluation of cognitive profiles of adequate and inadequate responders was consistent with a continuum of severity (as opposed to qualitative differences), showing greater language and reading impairment prior to the intervention in students who were inadequate responders.

### **Efficacy of a First-Grade Responsiveness-to-Intervention Prevention Model for Struggling Readers**

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Gilbert, J. K., Compton, D. L., Fuchs, D., Fuchs, L. S., Bouton, B., Barquero, L. A., & Cho, E. (2013). Efficacy of a first-grade responsiveness-to-intervention prevention model for struggling readers. *Reading Research Quarterly*, 48(2), 135–154. <https://doi.org/10.1002/rrq.45>

This randomized control trial examined the efficacy of a multitiered supplemental tutoring program within a first-grade responsiveness-to-intervention prevention model. Struggling first-grade readers (n = 649) were screened and progress monitored at the start of the school year. Those identified as unresponsive to general education Tier 1 (n = 212) were randomly assigned to receive Tier 2 small-group supplemental tutoring (n = 134) or to continue in Tier 1 (n = 78). Progress-monitoring data were used to identify nonresponders to Tier 2 (n = 45), who were then randomly assigned to more Tier 2 tutoring (n = 21) or one-on-one Tier 3 tutoring (n = 24). Tutoring in Tier 3 was the same as in Tier 2 except for the delivery format and frequency of instruction. Results from a latent change analysis indicated nonresponders to Tier 1 who received supplemental tutoring made significantly higher word reading gains compared with controls who received reading instruction only in Tier 1 (effect size = 0.19). However, no differences were detected between nonresponders to Tier 2 who were assigned to Tier 3 versus more Tier 2. This suggests more frequent 1:1 delivery of a Tier 2 standard tutoring program may be insufficient for intensifying intervention at Tier 3. Although supplemental tutoring was effective in bolstering reading performance of Tier 1 nonresponders, only 40% of all Tier 2 students and 53% of Tier 2 responders were reading in the normal range by grade 3. Results challenge the preventive intent of short-term, standard protocol, multitiered supplemental tutoring models.

### **Performance of Students with Significant Cognitive Disabilities on Early-Grade Curriculum-Based Measures of Word and Passage Reading Fluency**

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Lemons, C. J., Zigmond, N., Kloo, A. M., Hill, D. R., Mrachko, A. A., Pattera, M. F., ... & Davis, S. M. (2013). Performance of students with significant cognitive disabilities on early-grade curriculum-based measures of word and passage reading fluency. *Exceptional Children*, 79(4), 408–426. <https://doi.org/10.1177/001440291307900402>

Alternate assessments have been used for the last 10 years to evaluate schools' efforts to teach children with significant cognitive disabilities. However, few studies have examined the reading skills of children who participate in these assessments. The purpose of this study was to extend understanding of the reading skills of this population by administering early-grade word and passage reading fluency curriculum-based measures to a sample of 7,440 students in Grades 3 through 8 and 11. Overall, the performance on curriculum-based measures and the relationship with alternate assessment performance varied based upon disability, grade, and level of alternate assessment. The authors discuss implications for test developers and teachers along with future directions for research.

## **Extensive Reading Interventions for Students with Reading Difficulties After Grade 3**

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Wanzek, J., Vaughn, S., Scammacca, N. K., Metz, K., Murray, C. S., Roberts, G., & Danielson, L. (2013). Extensive reading interventions for students with reading difficulties after grade 3. *Review of Educational Research*, 83(2), 163–195. <https://doi.org/10.3102/0034654313477212>

This synthesis extends a report of research on extensive interventions in kindergarten through third grade (Wanzek & Vaughn, 2007) to students in Grades 4 through 12, recognizing that many of the same questions about the effectiveness of reading interventions with younger students are important to address with older students, including (a) how effective are extensive interventions in improving reading outcomes for older students with reading difficulties or disabilities and (b) what features of extensive interventions (e.g., group size, duration, grade level) are associated with improved outcomes. Nineteen studies were synthesized. Ten studies met criteria for a meta-analysis, reporting on 22 distinct treatment/comparison differences. Mean effect sizes ranged from 0.10 to 0.16 for comprehension, word reading, word reading fluency, reading fluency, and spelling outcomes. No significant differences in student outcomes were noted among studies related to instructional group size, relative number of hours of intervention, or grade level of intervention. (Contains 4 tables.)

## **Planning for Adolescent Tier 3 Reading Instruction**

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Wilson, J. A., Faggella-Luby, M., & Wei, Y. (2013). Planning for adolescent tier 3 reading instruction. *TEACHING Exceptional Children*, 46(1), 26–34. <https://doi.org/10.1177/004005991304600104>

No published abstract.

## **Accelerating Chronically Unresponsive Children to Tier 3 Instruction: What Level of Data is Necessary to Ensure Selection Accuracy?**

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Compton, D. L., Gilbert, J. K., Jenkins, J. R., Fuchs, D., Fuchs, L. S., Cho, E., ... & Bouton, B. (2012). Accelerating chronically unresponsive children to tier 3 instruction: What level of data is necessary to ensure selection accuracy? *Journal of Learning Disabilities*, 45(3), 204–216. <https://doi.org/10.1177/0022219412442151>

Response-to-intervention (RTI) approaches to disability identification are meant to put an end to the so-called wait-to-fail requirement associated with IQ discrepancy. However, in an unfortunate irony, there is a group of children who wait to fail in RTI frameworks. That is, they must fail both general classroom instruction (Tier 1) and small-group intervention (Tier 2) before becoming eligible for the most intensive intervention (Tier 3). The purpose of this article was to determine how to predict accurately which at-risk children will be unresponsive to Tiers 1 and 2, thereby allowing unresponsive children to move directly from Tier 1 to Tier 3. As part of an efficacy study of a multitier RTI approach to prevention and identification of reading disabilities (RD), 129 first-grade children who were unresponsive to classroom reading instruction were randomly assigned to 14 weeks of small-group, Tier 2 intervention. Nonresponders to this

instruction (n = 33) were identified using local norms on first-grade word identification fluency growth linked to a distal outcome of RD at the end of second grade. Logistic regression models were used to predict membership in responder and nonresponder groups. Predictors were entered as blocks of data from least to most difficult to obtain: universal screening data, Tier 1 response data, norm referenced tests, and Tier 2 response data. Tier 2 response data were not necessary to classify students as responders and nonresponders to Tier 2 instruction, suggesting that some children can be accurately identified as eligible for Tier 3 intervention using only Tier 1 data, thereby avoiding prolonged periods of failure to instruction.

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### **Smart RTI: A Next-Generation Approach to Multilevel Prevention**

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Fuchs, D., Fuchs, L. S., & Compton, D. L. (2012). Smart RTI: A next-generation approach to multilevel prevention. *Exceptional Children*, 78(3), 263–279.  
<https://doi.org/10.1177/001440291207800301>

During the past decade, responsiveness to intervention (RTI) has become popular among many practitioners as a means of transforming schooling into a multilevel prevention system. Popularity aside, its successful implementation requires ambitious intent, a comprehensive structure, and coordinated service delivery. An effective RTI also depends on building-based personnel with specialized expertise at all levels of the prevention system. Most agree on both its potential for strengthening schooling and its heavy demand on practitioners. In this article, we describe Smart RTI, *which we define as making efficient use of school resources while maximizing students' opportunities for success. In light of findings from recent research, we discuss three important features of Smart RTI: (a) multistage screening to identify risk, (b) multistage assessment to determine appropriate levels of instruction, and (c) a role for special education that supports prevention.*

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### **Remediating Reading Difficulties in a Response to Intervention Model With Secondary Students**

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Pyle, N., & Vaughn, S. (2012). Remediating reading difficulties in a response to intervention model with secondary students. *Psychology in the Schools*, 49(3), 273–284.  
<https://doi.org/10.1002/pits.21593>

The research on Response to Intervention (RtI) with secondary students is scant; however, a recently conducted, multiyear, large-scale implementation of RtI with middle-school students provides findings that inform practices and future directions for research. This article provides an overview of the findings from each of the 3 years of an intensive, tiered reading intervention with middle-school students. In Year 1, students were provided with a Tier 1 and Tier 2 intervention. In Year 2, minimal responders were provided with another year of intervention (Tier 3), and again in Year 3, minimal responders to the 2-year intervention were provided with a third year of intervention (Tier 4). Using students' responsiveness to intervention as a prerequisite for a subsequent year of intensive instruction, minimal responders received a total of up to 3 years of intervention. The efficacy of an enhanced primary (Tier 1), secondary (Tier 2), and tertiary (Tier 3) intervention, and an individualized, intensive reading intervention (Tier 4) are discussed, as well as the logistics of implementing an RtI model with secondary students.



## **Effects of Intensive Reading Intervention for Eighth-Grade Students with Persistently Inadequate Response to Intervention**

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Vaughn, S., Wexler, J., Leroux, A., Roberts, G., Denton, C., Barth, A., & Fletcher, J. (2012). Effects of intensive reading intervention for eighth-grade students with persistently inadequate response to intervention. *Journal of Learning Disabilities, 45*(6), 515–525.  
<https://doi.org/10.1177/0022219411402692>

The authors report the effects of a yearlong, very small-group, intensive reading intervention for eighth-grade students with serious reading difficulties who had demonstrated low response to intervention (RTI) in both Grades 6 and 7. At the beginning of Grade 6, a cohort of students identified as having reading difficulties were randomized to treatment or comparison conditions. Treatment group students received researcher-provided reading intervention in Grade 6, which continued in Grade 7 for those with low response to intervention; comparison students received no researcher-provided intervention. Participants in the Grade 8 study were members of the original treatment (N = 28) and comparison (N = 13) conditions who had failed to pass a state-mandated reading comprehension test in both Grades 6 and 7. In Grade 8, treatment group students received a 50-minute, daily, individualized, intensive reading intervention in groups of two to four students per teacher. The results showed that students in the treatment condition demonstrated significantly higher scores than comparison students on standardized measures of comprehension (effect size = 1.20) and word identification (effect size = 0.49), although most continued to lack grade-level proficiency in reading despite 3 years of intervention. Findings from this study provide a rationale for intensive intervention for middle school students with severe reading difficulties.

## **Effects of Individualized and Standardized Interventions on Middle School Students with Reading Disabilities**

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Vaughn, S., Wexler, J., Roberts, G., Barth, A. A., Cirino, P. T., Romain, M. A., ... & Denton, C. A. (2011). Effects of individualized and standardized interventions on middle school students with reading disabilities. *Exceptional Children, 77*(4), 391–407.  
<https://doi.org/10.1177/001440291107700401>

This study reports the effectiveness of a year-long, small-group, tertiary (Tier 3) intervention that examined 2 empirically derived but conceptually different treatments and a comparison condition. The researchers had randomly assigned all students to treatment or comparison conditions. The participants were seventh- and eighth-grade students from the previous year who received an intervention and did not meet exit criteria. The researchers assigned them to one of two treatments: standardized (n = 69) or individualized (n = 71) for 50 min a day, in group sizes of 5, for the entire school year. Comparison students received no researcher-provided intervention (n = 42). The researchers used multigroup modeling with nested comparisons to evaluate the statistical significance of Time 3 estimates. Students in both treatments outperformed the comparison students on assessments of decoding, fluency, and comprehension. Intervention type did not moderate the pattern of effects, although students in the standardized treatment had a small advantage over individualized students on word attack. This study provides

a framework from which to refine further interventions for older students with reading disabilities.

### **A Response to “Competing Views: A Dialogue on Response to Intervention”: Why Response to Intervention Is Necessary but Not Sufficient for Identifying Students With Learning Disabilities**

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Vaughn, S., & Fuchs, L. S. (2006). A response to “competing views: A dialogue on response to intervention”: Why response to intervention is necessary but not sufficient for identifying students with learning disabilities. *Assessment for Effective Intervention*, 32(1), 58–61. <https://doi.org/10.1177/15345084060320010801>

We respond to the comments of Batsche, Kavale, and Kovaleski: (this issue), on Response To Intervention (RTI) and learning disabilities. Historically, discrepancy between IQ and achievement has been used by many as a criterion for identification of learning disabilities. Recently, RTI is considered as a practice for identifying consistent and persistent underachievement in students and thus providing valuable data for determining learning disabilities. Issues related to the research base for RTI and implications of use of RTI are presented.

### **Data-Based Program Modification: A Continuous Evaluation System With Computer Software to Facilitate Implementation**

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Fuchs, L. S., Deno, S. L., & Mirkin, P. K. (1983). Data-based program modification: A continuous evaluation system with computer software to facilitate implementation. *Journal of Special Education Technology*, 6(2), 50–57. <https://doi.org/10.1177/016264348300600206>

This paper provides a rationale for and describes a continuous evaluation system, data-based program modification (DBPM), which has demonstrated technical adequacy, logistical feasibility, and instructional effectiveness. Additionally, the paper illustrates the use of DBPM with a case study, and then describes the DBPM software package that stores, summarizes, analyzes, and displays a graph of student performance data.

### **Data-Based Program Modification: A Manual**

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Deno, S. L., & Mirkin, P. K. (1977). *Data-based program modification: A manual*. Retrieved from <https://files.eric.ed.gov/fulltext/ED144270.pdf>

Presented is an empirically oriented, data-based program modification (DBPM) manual for individualizing educational plans for any child with a learning or behavioral problem. The rationale for an empirically based program, the socio-legal context, and specific measurement and evaluation procedures (e.g. time series procedures and discrepancy measurement) are described in Part I. Covered in Part II is the sequencing of initial assessment and in Part III a program planning sequence is provided. Program implementation, adjustment, and certification are discussed in Parts IV, V, and VI. Consultation, training, and the indirect role of the resource teacher are treated in Part VII. Featured throughout is the application of DBPM to the case of a

hypothetical child. Three appendixes provide appropriate questions for each decision area of the DBPM, case report summaries, and a list of change strategies.