The Application of Response to Intervention to Young Children with Identified Disabilities

10

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While Response to Intervention (RTI) has been a well-known approach for preventing learning difficulties in school-aged children for many years (e.g., Burns, Appleton, & Stehouwer, 2005; Vaughn, Linan-Thompson, & Hickman, 2003), it has only recently begun gaining a foothold in programs for young children (e.g., Buysse & Peisner-Feinberg, 2010; Greenwood et al., 2011). The use of RTI is a logical step for prekindergarten programs given the long recognition of the importance of early childhood programs as a means of preventing later academic and behavioral difficulties (Anderson et al., 2003). For RTI approaches to be successfully integrated in pre-k programs, however, RTI as currently conceptualized for students in K-12 settings must be adapted to align with early childhood beliefs and practices (Barnett, VanDerHeyden, & Witt, 2007; Coleman, Roth, & West, 2009). Importantly, several existing early childhood practices are already a good fit with RTI (e.g., assessment of core curriculum program quality, the use of intentional teaching with embedded and explicit instruction, universal screening and progress monitoring measures to facilitate data-driven decision making, and the involvement of families as partners for the success of the child). Researchers and practitioners have been working to adapt RTI approaches to the programs, practices, and conceptual models of instruction within pre-k settings. This chapter aims to provide an overview of the current state of practice for RTI in early childhood and then specifically provide some information on how young children with special needs might be served in programs implementing RTI models.

An Introduction to Response to Intervention

The capacity to improve the social and educational outcomes of all preschool children and prevent unnecessary developmental delays is a long-standing societal goal but one that continues to elude us. While early childhood research, practice, and policy are vigorous fields that are actively pursued, they often fail to intersect in ways that enhance the quality of day-to-day instruction for young children. While inclusion in high-quality early education programs has been a fundamental value and the ultimate goal for *all* young children, the simple physical inclusion of young children with special needs with typically developing children does not define the manner in which instructional interactions occur to enhance children's short- and long-term outcomes. Thus, identification of the active ingredients of effective instructional design and

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environment to support inclusion continues to be a goal for researchers and practitioners. One approach for describing how that instruction and caregiving should occur to meet the needs of all children is Response to Intervention (RTI). Response to Intervention (RTI) is a framework aimed at prevention of learning and behavioral problems by identifying those children/students who might benefit from additional instructional support and then providing that support in a timely fashion (Fuchs & Fuchs, 2007; Gersten et al., 2008).

The features of RTI create the opportunity for early childhood (EC) professionals to meet the diverse needs of young children. Specifically, an early childhood RTI framework creates opportunities to tailor instruction to the level of need of individual children and implement hierarchies of instructional support differentiated to that need through a data-based decision-making process (Greenwood et al., 2011; National Professional Development Center on Inclusion, 2012).

The origin of RTI in American education resulted from concern that support systems for struggling students in K-12 had established a "wait-to-fail" model (Fuchs & Fuchs, 2006). In such models, students who were behind their same-aged peers often received no additional or differentiated instruction in the general education curriculum until they were deemed eligible for special education services. Specifically under Individuals with Disabilities Education Improvement Act (2004), practices associated with RTI became an alternative way to identify K-12 students with learning disabilities (Bradley, Danielson, & Hallahan, 2002). Thus, in K-12 education, RTI gained popularity as a means of ensuring students received timely access to evidence-based teaching and instructional practices in the general education curriculum prior to being referred for special education.

In early childhood programs, there has been a historic focus on prevention of learning problems. The USA has long embraced programs to support young children at risk due to poverty (e.g., Head Start and Early HeadStart) (Barnett, 1995; Brooks-Gunn, 2003) and those with developmental delays (e.g., IDEA Part C and Part B programs) (Trohanis, 2008). Typically, however, prevention in early education programs has meant providing early services only to highly vulnerable sectors of the population—but not to all children. RTI is an approach that takes prevention in early education to another level. Recognizing that each child learns at his/her own pace and each has a unique history of learning experiences, RTI provides a framework for differentiating instructional interventions for individual children based on observed needs or potential benefits. The RTI approach seeks to move practice away from the traditional model of waiting for students to demonstrate significant delay before they are referred for special education for more intensified instruction or intervention. Instead, within an RTI approach, children who show the first signs of delay are provided with extra support or more opportunities to learn to get them on the right track before they enter school. While this approach has not been expanding rapidly through early education programs, recent annual surveys of state administrators of pre-k programs indicate that RTI approaches are increasingly evident to support young children's academic and behavioral development (Linas, Greenwood, & Carta, 2012).

But an emerging question for those seeking to implement RTI for all children is where do children with special needs fit within these approaches? How does RTI apply to young children with identified disabilities or delays—how do they receive services in systems implementing RTI to prevent academic delays and behavioral challenges? The focus of this chapter is to address these issues by describing some research carried out by the Center for Response to Intervention in Early Childhood (CRTIEC) and by sharing lessons we have learned in working with multiple programs across the nation implementing tiered models of instructional support for young children with and without disabilities.

While a variety of RTI [now sometimes called Multi-Tiered Systems of Support (MTSS) approaches have been developed for young children [e.g., CRTIEC, (Carta et al., in press)]; Recognition and Response (Buysse et al., 2013); the Pyramid Model (Fox, Carta, Strain, Dunlap,

& Hemmeter, 2010), they share a set of key features that provide the structure for the type of content and processes by which tiered approaches have been implemented in early education. A consensus paper recently developed by Division of Early Childhood (DEC), National Association for the Education of Young Children (NAEYC), and the National Head Start Association (2013) outlined the four common features of early childhood RTI frameworks: (1) multi-tiered systems of teaching and caregiving practices, (2) high-quality curriculum for all children, (3) ongoing assessment and continuous progress monitoring for all children, and (4) a collaborative problem-solving process.

Features of an EC RTI Framework

The first feature of an EC RTI framework is a *multi-tiered approach* wherein support is provided to children with greater needs, involving either more intense or more individualized learning opportunities or caregiving interactions. Fundamental to the multi-tiered approach is that high-quality instruction or supports are matched to children's level of need so they can be successful and experience growth toward identified outcomes. Higher tiers of support are provided to those children whose behavior indicates that they are struggling to learn in response to a high-quality Tier 1 curriculum. The higher tiers of support may consist of increasing the time or intensity (children's opportunities to learn) to specific aspects of the curriculum (see Fig. 10.1).

There are no established "rules" for how this supplemental assistance to children should be provided nor are there requirements for a certain number of tiers. Small group instruction is a frequently used model for providing supplemental support at Tier 2. For example, an additional 15 min per day in a group of three or four children may be devoted to providing each child with substantially more learning opportunities on a specific skill than each would typically receive within the larger classroom (Bailet, Kepper, Piasta, & Murphy, 2009; Spencer et al., 2012). In a home context, a Tier 2 level of support in language might be provided by parents who embed learning opportunities for specific new vocabulary words during various daily routines. An important aspect of a child's placement in a tiered model is that it is dynamic or can change up or down depending on the child's growth or lack of response to the intervention provided. An important feature in that regard is ongoing formative assessment that provides a clear picture of whether the child is responding to the level of support being provided and whether the child is "closing the gap" in performance relative to his or her peers. Therefore, if a child's trajectory demonstrates substantial growth, his or her level or tier of support may be reduced. Similarly, if progress monitoring data on a child demonstrated that he or she had not responded to the enhanced support, a higher tier or added intensity of intervention would be considered.

The second feature of an EC RTI/MTSS framework and one that serves as the underlying foundation is the presence of a *curriculum* that is provided for all children. The core curricula or universal level of support should be research based with evidence of effectiveness for promoting growth toward identified relevant outcomes. The core curriculum should be based on a scope and sequence of skills that provide the framework for instruction that is explicit and systematic as well as developmentally and culturally appropriate.

The third common feature of RTI models is a system of *universal screening and progress monitoring.* Universal screening is used to identify children who may need more instructional or caregiving support. Universal screening within RTI is distinct from "developmental screening" often used in early childhood programs in two respects: (1) it examines how well children are performing relative to a benchmark in a specific outcome areas (typically early literacy, language, and behavioral/social-emotional development) instead of across multiple domains as is the case with developmental screening, and (2) it is carried out on all children on an ongoing basis—usually at least three times per year to determine whether children are growing in response to the intervention provided. It is the systematic and ongoing

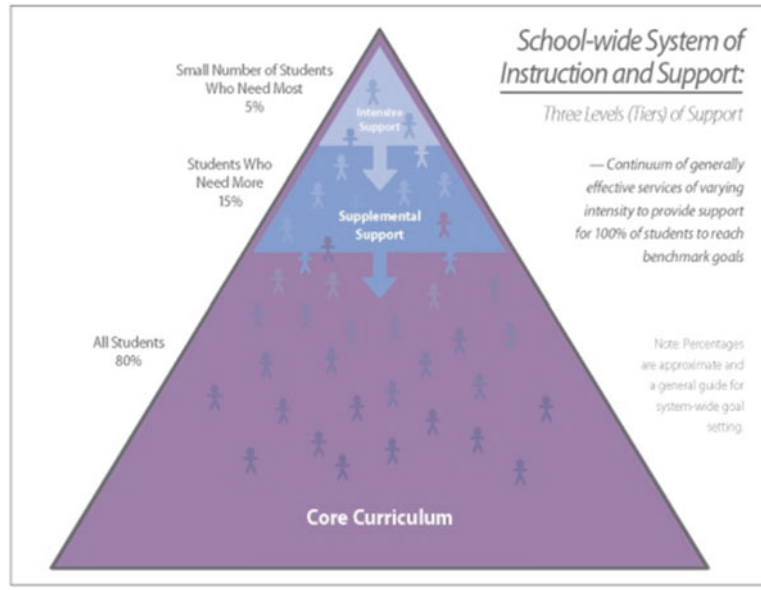

Fig. 10.1 Center for response to intervention in early childhood tiered model with permeable tiers

nature of the universal screening that ensures that children will be identified at the earliest sign that they need additional support to benefit from the curriculum. Similarly, RTI frameworks include strategies for frequent progress monitoring to help inform decisions about whether children receiving Tier 2 or Tier 3 support are learning in response to the supplemental instruction they are receiving. Trends in progress monitoring data are examined to see if children's rates of learning are increasing or, alternatively, whether they are making little or no change in their trajectories of learning. Decision rules are typically provided to help identify when children are responding well enough to change their level of support or intensity of instruction. Rules for determining how much change is necessary before moving children to a higher or lower tier are a critical aspect for guiding this dynamic process.

Finally, RTI models depend on a *collaborative problem-solving process* that helps guide decisions about what an individual child needs to support learning and behavior. Key individuals knowledgeable about the child (e.g., the teacher, parents, administrator, school psychologist, social worker) use data to see how a child is progressing and use the decision-making rules to identify what tier of support the child needs and what type of instructional strategies would help the child be most successful. These individuals gather on a regular basis to track the child's progress and determine when changes in instruction are needed.

How Does RTI in Early Childhood Overlap and Diverge from Preschool Inclusion?

The delineation of defining features of RTI for young children may cause one to ask "How is this approach different from high-quality inclusive practices?" and "Aren't many of the key features found in RTI the same as those that should be implemented in inclusive early education settings?." In fact, it is instructive to do a side-by-side examination of the critical elements of both RTI and MTSS in early and preschool inclusive practices to see how they line up. What features do they have in common and where are there distinct differences? Of course, high-quality inclusive practices in preschool have been defined in various ways (see Odom et al., 1999; Sandall & Schwartz, 2013; Winton, 2013). The core features of most conceptualizations of preschool inclusion include the following:

- The use of high-quality practices that address the needs of *all* children in the general education setting
- The use of a problem-solving approach to identify the specific instructional targets that would most benefit individual children
- The identification of instructional or caregiving strategies that would best address the instructional targets of the individual child
- The use of progress monitoring to address how well children respond to instructional interventions (Brown, Knopf, Conroy, Googe, & Greer, 2013)

High-Quality Instruction and Curriculum in the General Education Setting

The foundation of preschool inclusion is the availability of high-quality early childhood activities, curricula, and services (Sandall & Schwartz, 2008, 2013; Snyder, McLaughlin, & Denney, 2011). While inclusion is typically defined as places where children with developmental delays "are playing, learning, working, and living with family and friends in their communities" (Brown & Conroy, 1997, p. 7), meaningful inclusion also depends on effective instructional practices that support active engagement and learning. Places where high-quality inclusion occurs are well-organized environments that promote both child-initiated and teacher-led activities. Moreover, they are settings where curriculum provides the foundation for the knowledge and skills that children need to be successful in their present and future school and community environments. High-quality curricula should include a comprehensive set of learning outcomes that serve as a guide for teaching. In RTI approaches, a high-quality curriculum in Tier 1 serves as a foundation for all other tiers of instruction and should lay the groundwork for sufficient learning opportunities embedded within daily routines and activities (Grisham-Brown, Hemmeter, & Pretti-Frontczak, 2005). The underlying assumption is that a strong Tier 1 foundation will promote optimal learning outcomes and decrease the need for more intensive intervention. Although RTI models for young children have great potential and hold many positives, an ever-present concern in RTI models for young children is the scarcity of evidence-based Tier 1 curricula and the frequent reports of instruction that fail to meet standard definitions of high quality (e.g., Greenwood et al., 2012).

Collaborative Problem-Solving Process

A problem-solving model is a systematic approach that reviews a child's strengths and weaknesses, identifies appropriate instructional interventions to meet the child's specific needs, collects data on a frequent basis to monitor the child's progress, and evaluates the effectiveness of the interventions that have been implemented (Canter, 2004). For many years, problem-solving processes have been a core feature of individualization and the development of Individualized Education Programs (IEPs) for children with special needs. Those knowledgeable about the child (e.g., early childhood educators, parents or other family members, program administrators, school psychologists, social workers) gather pertinent data about the child's instruction and then summarize, analyze, and interpret it to see how a child is progressing (Gischlar, Hojnoski, & Missall, 2009; Hojnoski, Gischlar, & Missall, 2009a, 2009b). They then use decision-making rules to identify the types of instructional supports a child needs and what type of strategies would help the child be most successful (Wolery, 2004). These individuals further collaborate to track the child's progress and determine when changes are needed.

Similarly, in RTI models, collaborative problem-solving approaches are used for guiding data-based decision making and determining specific interventions appropriate for individual children. In RTI models, however, the problem-solving approach employs specific steps that include problem identification, analysis of the problem to hypothesize why it is occurring, development of an intervention to address the problem, and evaluation of the

child's response to the intervention through formative assessment. Additionally, a structured, systematic problem-solving process within an RTI model assists in the identification of groups of students with similar learning needs and concerns.

Identification of Instructional Strategies Targeted to Individual Children

The individualization of services is a fundamental principle of recommended preschool inclusionary practices (Brown et al., 2013; Division for Early Childhood, 2014). What typically occurs when high-quality inclusive practices are implemented is that the IEP process generates a plan to address a child's individual needs that includes learning objectives and support services and a recommendation concerning the least restrictive placement.

In an RTI approach, universal screening within the general education setting is used to identify the children needing more than Tier 1 instruction. These screenings typically identify children for a specific tier of instruction by comparing the child's performance relative to a national or local norm in one or more domains. Then ongoing formative assessment provides an indication of the child's response to the intervention and whether he or she is receiving an appropriate level of support to close the achievement gap or whether a higher tier of instructional support is needed. In this way, the child's response to instruction is often (but not always) a determinant of whether a referral is made for the evaluation for special education eligibility (Marston, 2002; Reschly & Tilly, 1999).

The Use of Progress Monitoring to Determine the Effectiveness of Intervention

The measurement of children's progress on learning objectives has long been used as an index of effectiveness of early education programs in meeting the instructional needs of young children (Grisham-Brown & Pretti-Frontczak, 2011; Wolery, 2004). In both high-quality preschool inclusionary programs employing typical IEP procedures and in early education programs implementing RTI/MTSS, children's progress on specific objectives is measured across time to determine whether intervention appears to be making a difference in helping a child gain skills or change learning trajectories. A lack or inadequacy of change or growth may indicate that instructional procedures should be modified. When this type of process is employed within an RTI model, progress monitoring typically occurs on a more regular and frequent basis than in early childhood programs not employing RTI approaches. Within tiered models like RTI, this increased frequency of monitoring allows the teacher or practitioner to make changes on an ongoing basis in the content or tier of instructional support to maximize the efficiency and effectiveness of the intervention.

How Do Children with Special Needs Fit into RTI Models of Service?

Given that local education agencies and programs are adopting RTI and other tiered approaches to meet the needs of all children, how do children with identified disabilities or who have been deemed eligible for special education fit into these tiered approaches? First, it is important to note that federal policies do not specifically address the use of RTI for children prior to kindergarten. However, even for school-aged children, IDEA does not prohibit children with disabilities from receiving instruction using RTI strategies unless the use of such strategies is inconsistent with their IEPs. Additionally, schools may use data gathered through RTI strategies in its evaluations of children with specific learning disabilities.

Therefore, local programs have incorporated special education for pre-K-12 children into their RTI frameworks in various ways. Some models of RTI define Tier 3 as special education. Thus, when children do not respond positively to a sec-

ond tier of instructional support and need more individualized intervention consistent with their IEPs, they might obtain this level of instruction intensity through special education in Tier 3. Alternatively, some models of RTI make available three tiers of instructional intensity through general education and deliver a Tier 4 through special education (Shapiro, 2015).

What is important here is an understanding that an IEP should not necessarily relegate a child to a specific tier of instruction. For example, a child may have an IEP because he or she exhibits significant challenging behaviors and requires special education to address these needs. That same child, however, may be functioning at normative levels in early literacy and math skills, and so receiving Tier 1 in this area might be appropriate. Moreover, regular formative assessment may also demonstrate that his the child's literacy skills are growing at an adequate rate in response to the Tier 1 curriculum and instruction. So it is clear that any tier of instructional support might be an appropriate level of support in an RTI model for a child with an identified special need depending on his or her level of performance on any given domain of learning and rate of growth in response to high fidelity of instruction.

What Have We Learned About RTI in Early Education?

Prevention-oriented approaches like RTI offer a means of increasing the intensity of instruction for struggling learners in general education settings over and above what they would receive in the Tier 1 being implemented for all children. A fundamental assumption behind this model is that Tier 1 should be based on a high-quality, research-based curriculum focused on school readiness, promoting both academic and social-emotional competence, and implemented with a high degree of fidelity (Buysse & Peisner-Feinberg, 2013). If Tier 1 fails to meet this standard of quality, higher proportions of children will probably fail to show adequate growth and will require more intensive levels of instructional support. However, limited information has been available to indicate whether high-quality Tier 1 is typically being implemented in early education programs. This was a question that needed answering prior to scaling up RTI in programs for young children. Therefore, the Center for Response to Intervention, CRTIEC, conducted a multi-site investigation to answer the following question: "What exactly is 'business as usual' in terms of the quality of preschool Tier 1 early literacy and language instruction?"

With that goal, CRTIEC researchers carried out an extensive observation study of the quality with which typical community-based programs were supporting children's literacy development. We sought to determine whether "business as usual" was adequate for providing the high-quality foundation needed in early literacy and language RTI models (Greenwood et al., 2012). In this study, we enrolled 65 classrooms from 23 programs/districts in 4 communities in 4 states and observed and assessed 659 children in their year prior to kindergarten (Greenwood et al., 2012). In each of the 4 communities, types of early education programs that were available in those cities were included, but no attempt was made to create a systematic representative sample of program types. The types of early education programs that were recruited and enrolled included state-funded prekindergarten programs, Head Start, Title 1 programs, and tuition-based programs. Participating classrooms could serve children with special needs, as long as they did not constitute the majority of students in the classroom. In order to examine instructional quality in these programs, we carried out direct, observational measurement of teacher-child interactions in these programs and also administered formative and summative measures of children's language and literacy outcomes at the beginning, middle, and end of the year prior to kindergarten.

Several important findings emerged from this study. Overall, and across program types, quality was low and variable specifically as related to the rigor of the language and literacy curriculum, amount of time teachers were observed in literacy instruction, and the amount of time children were engaged in literacy. While most children exhibited

gains in early literacy from fall to spring, the lowest functioning children (who were screened for Tier 2 or 3) did not demonstrate rates of growth that narrowed the early literacy gap as referenced to typically developing peers. Furthermore, little evidence was available that children needing Tier 2 or 3 were receiving increased instructional intensity or instructional differentiation. Approximately 30–35 % of children were identified in the fall as needing additional support beyond the Tier 1 curriculum rather than the 20 % that is generally identified in K-12 settings. In Title 1 and Head Start programs, settings where children must be income eligible, the proportions of children identified as needing Tier 2 or 3 support were much higher than proportions identified in tuition-based programs. Furthermore, for English Language Learners children and those with special needs, the proportion of children needing Tier 2 or 3 support was over 40 %, significantly greater than the expected 20 % (see Carta et al., 2015).

Within this large descriptive study, we were able to examine the early literacy and language functioning of the subsample of children who had been defined by their programs as having special needs ($n=68$; 11 % of the sample). Of these 68 children, 35 were receiving services under IDEA for a speech and/or language delay, 6 were receiving services under IDEA for an educational diagnosis of Developmental Delay only, and the remaining 27 children were receiving services under IDEA for autism, emotional/behavioral, "others," or a combination of categories (i.e., speech/language needs with developmental delay).

We were interested in examining how this subgroup of children with IEPs compared on our measures of early literacy/language in the fall prior to their kindergarten year, how their levels of growth in these areas compared during the school year, and whether they were closing the achievement gap in early literacy and language as they were entering kindergarten. Overall, when we compared children with and without special needs across these measures in the fall of their prekindergarten year, we found mixed results. We found that children with special needs performed comparably to typically developing children on measures of vocabulary and print knowledge, but children without special needs scored significantly higher on measures of phonological awareness (PA). Though initial skill level differences on these measures varied across the two groups of children, rates of growth for children with and without disabilities were similar across the year across all the measures. However, despite the fact that children with special needs gained skills across the year, their end-of-year scores illustrated that they remained significantly behind their peers as they entered kindergarten (McElhattan, Guerrero, Linas, & Schneider, 2012).

These findings have important practice and policy implications for children with and without special needs. First, the overall low levels of literacy skills in children with and without identified disabilities indicate the importance of screening and monitoring *all* children's growth in this domain of school readiness, which is particularly important for children with special needs. While it is important to allow children to develop skills through universal instruction and practices, implementing more intensive evidence-based early literacy interventions may be necessary for children both with and without special needs if their growth is not adequate in response to instruction.

Second, the fact that some language and literacy growth was occurring in children with disabilities when attending a high-quality preschool setting is encouraging. This finding also supports prior research that children with disabilities gain critical skills when they are exposed to appropriate intentional early literacy instruction in high-quality environments (Laing & Espeland, 2005; Roth, Troia, Worthington, & Dow, 2002). These data from a set of classrooms across the USA provide some preliminary data that young children, regardless of disability status, are demonstrating gains in important skills such as vocabulary and the ability to identify sounds associated with specific letters. Preschool programs should provide these students the same access to opportunities to learn these skills so critical for later academic success.

Third, even though children are making gains, we should continue to focus on ways to improve the literacy experiences of children both with and

without special needs in prekindergarten classrooms. The classrooms observed in this study were a select group in that all indicated that they were implementing Tier 1 curricula in language and early literacy with scope and sequence. Nonetheless, children with special needs included within these classrooms and provided instruction in these areas still significantly lagged behind their peers at the end of the year. It is important to provide interventions for all children who show less than adequate growth in response to general classroom instruction regardless of whether or not they have been identified as having a developmental delay or disability. These interventions should address specific skills and provide opportunities for children to meaningfully engage with literacy-rich materials and developmentally appropriate experiences.

Providing Higher Tiers of Instructional Support

Developing and validating Tier 2 and Tier 3 interventions in the area of early literacy and language was another major aspect of the work of CRTIEC. Research colleagues at the Ohio State University developed and validated Tier 2 interventions in vocabulary/comprehension (Spencer, Goldstein, Sherman et al., 2012) and in early literacy intervention (Kruse, Spencer, Olszewski, & Goldstein, 2015; Noe, Spencer, Kruse, & Goldstein, 2014). Colleagues at the Dynamic Measurement Group engaged in similar activities and developed Tier 3 interventions in these same domains (Kaminski, Powell-Smith, Hommel, McMahon, & Bravo-Aguayo, 2014). What follows is a short description of their work in these areas and some case examples of how children with special needs responded to these interventions.

Tier 2 early literacy intervention. As indicated in the descriptive study of Tier 1, high proportions of children begin their prekindergarten year with significant delays in early literacy skills (e.g., Greenwood et al., 2012). Therefore, CRTIEC investigators sought to develop a Tier 2 intervention that could be implemented in general early education settings. The *PAth to Literacy* was developed to focus on building core skills in phonological awareness (PA) and alphabet knowledge for children who had basic early literacy but needed additional support. While other studies have been carried out to examine the effectiveness of this Tier 2 intervention (e.g., Kruse et al., 2015; Noe et al., 2014), a recently completed cluster randomized trial (Goldstein et al., in preparation) provided the context for a case study of children with disabilities.

While the larger study took place across 18 classrooms in 3 different locations with the USA, participants for this case study of children with special needs came from 6 prekindergarten classrooms in Kansas. A gated screening procedure was used to identify children for participation in the Tier 2 intervention who were not developing PA skills through Tier 1 whole-class instruction. The goal of the screening procedure was to identify a small cluster of children in each of the six classrooms who exhibited basic expressive and receptive English language skill and deficits in PA. Three waves of screening were conducted with about 4 weeks between each wave using *DIBELS Next First Sound Fluency* (FSF) (Good & Kaminski, 2011) and *First Sound ID IGDI 2.0* (Wackerle-Hollman, Schmitt, Bradfield, Rodriguez, & McConnell, 2015) to identify children who were not developing PA skills. Using this procedure, clusters of 2–3 students were identified in each of the 6 classrooms. A total of 18 children (2 receiving special education services for delays in speech and language) were identified who would be appropriate candidates for Tier 2. Child 1 was a boy who was a native English language speaker. His teacher reported that he worked well in small groups and typically did not need extra instruction to learn along with peers in her inclusive classroom. Child 2 was a girl with a speech/language disorder who was a dual language learner. Her teacher reported that she often needed extra instruction to learn a new skill, but she worked well in small groups.

Both of these children received the Tier 2 *PAths to Literacy* intervention (Kruse et al., 2015) during daily small group lessons led by their classroom or para-educator. These scripted lessons included instruction on various PA skills

(blending, segmenting, word part identification, and first sound identification) using supplemental visual materials and interactive games. Teachers modeled the PA skills, had children practice, and prompted children to respond as a group and independently to various PA tasks. Scripted, response-contingent feedback was provided to children based on the group's response to various tasks.

Figures 10.2 and 10.3 provide a clear illustration of how two different children with similar identified needs responded to this Tier 2 PA intervention compared to the 16 other participating children without IEPs receiving this intervention. Overall, Child 1 responded favorably to the PA intervention, making noticeable pretest posttest gains on 2 formative measures of PA (DIBELS *Word Part Fluency* (+21) and DIBELS First Sound Fluency (+13)). At posttest, his scores were higher than those of children without disabilities (comparison group). On a standardized measure of PA, the *Test of Preschool Early Literacy* (Lonigan, Wagner, Torgesen, & Rashotte, 2007), Child 1 did not make any gains from pretest to posttest on the PA subtest; however, he did make gains in the Print Knowledge (TOPEL PK) subtest (+6; see Fig. 10.3), and his posttest scores on this measure were slightly higher than those of the comparison group. In contrast, Child 2 made only negligible gains on the *First Sound Fluency, Word Part Fluency*, and the TOPEL PA. However, she did make a 16-point gain on the *TOPEL PK*.

In reviewing the results of the two children with delays, a question arises about why the *PAth to Literacy* Tier 2 intervention resulted in such divergent outcomes. On closer inspection, one can speculate that Child 1 benefitted from the intervention because, as reported by his teacher, he did not seem to have any behavioral or learning challenges, and the additional support provided by the intervention was sufficient to help him reduce his literacy gap. In contrast, Child 2 might have not have had sufficient skills to benefit from the Tier 2 intervention and may have benefitted more from more individualized support such as a Tier 3 intervention. Her English proficiency was quite low, and she was noted to have difficulty staying focused during assessments. Perhaps the reason she scored high on the TOPEL PK measure was because expressive language was not necessary. The child needed only to name or point to sounds indicated by the teacher pointing to letters. Clearly, the level and type of support needed by

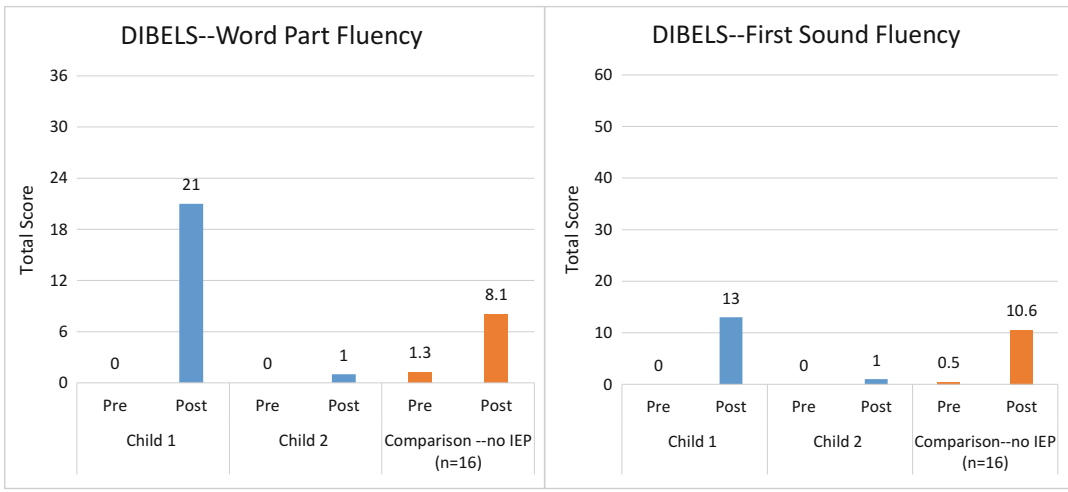

Fig. 10.2 Pre- and post-WSF and FSF scores for two children with IEPs compared to children without IEPs. Tier 2 pretest and posttest scores on First Sound Fluency and Word Part Fluency for two children who participated in the Tier 2 intervention and had IEPs. The Comparison group is the average of scores for children who participated in the Tier 2 intervention but did not have IEPs

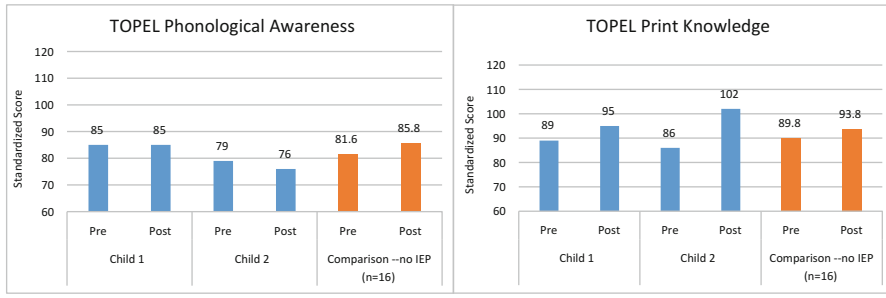

Fig. 10.3 Pre- and Post-Test TOPEL Scores for Two Children with IEPs in Tier 2 Compared to Pre- and Post-Test Scores for Children without IEPs

children with IEPs varied dramatically; and their performance was not only a function of their early literacy skills but also their ability to manage their behavior, stay on task, and respond appropriately to the various measures. Their response to instruction was clearly a reflection of more than their IEP status.

Tier 3 early literacy intervention. For an RTI model to be effective in a prekindergarten setting, it must meet the needs of all children, even those who require the most intense level of support. Therefore, CRTIEC researchers developed a Tier 3 intervention guided by three assumptions:

1. A Tier 3 intervention should be robust enough to accelerate the development of early literacy skills so that children in prekindergarten who have the greatest needs could enter kindergarten on track for beginning to learn to read, and with early literacy skills on par with their peers. This meant that the intervention should focus on the most critical skills and teach them in an optimum sequence.
2. Children identified for Tier 3 may be delayed in the acquisition of early literacy for a variety of reasons (including lack of exposure to/experience with print, speaking a first language other than English, lack of language/print-related instruction, speech/language delays, and other learning difficulties/disabilities). Therefore, Tier 3 interventions should be designed to be flexible to accommodate diverse learning needs.
3. Children with the lowest level of early literacy skills are most likely to benefit from intensified instruction that is more explicit, comprehensive, and systematic than what they might receive in lower tiers of instruction (Foorman & Torgesen, 2001; National Reading Panel, 2000). Therefore, Tier 3 interventions must incorporate elements of effective instructional design.

Given these assumptions about children needing the highest level of support, a Tier 3 early literacy intervention (Reading Ready Early Literacy, RRELI) was crafted by the CRTIEC early childhood design team at Dynamic Measurement Group (Kaminski et al., 2014). The goal of the intervention was to focus on a limited set of high-priority skills in order to increase the intensity of the intervention. These high-priority skills, selected for their utility in kindergarten (Gillon, 2000), included recognition and identification of letters of the alphabet by name, recognition and production of first sounds in words for a limited number of phonemes, and matching of phonemes to letters for a limited number of phonemes. The intervention was designed around brief (5–10 min) teacher-led activities to be conducted one-on-one or in small groups in the prekindergarten classroom.

Within an iterative research and development design, this Tier 3 intervention was tested across two CRTIEC sites and within Head Start and state prekindergarten-funded early childhood

programs. This allowed us to see whether children with disabilities in this context would be identified for a Tier 3 intervention in early literacy and, if selected, how they would respond. Similar to the process used to select children for the Tier 2 study described above, a multiple gating process was used to identify children who would be appropriate candidates for Tier 3 intervention. Measures for universal screening included the Individual Growth and Development Indicators First Sound and Alliteration measures (Wackerle-Hollman et al., 2015) and DIBELS Next First Sound Fluency (FSF, Cummings, Kaminski, Good, & O'Neil, 2011). In a randomized trial of the intervention across the two states, approximately 30 % of the 106 participants were children with disabilities. In the study overall, children who had disabilities made significantly smaller gains on the First Sound Fluency measure than children who were not identified as having a disability (Kaminski et al., 2014). Other studies in RTI with school-aged populations have reported similar findings (Denton, Fletcher, Anthony, & Francis, 2006; Wanzek & Vaughn, 2007).

Yet, data from two children with disabilities provide an interesting case study of how children with special needs responded to the Tier 3 early literacy intervention. Figure 10.4 provides an illustration of the pretest/posttest gains for two different children on two early literacy measures (First Sound Fluency and Word Part Fluency) and a comparison group (children who qualified for Tier 3 but who had not yet been identified as having a disability). Child 3 had a speech/language delay and was also a dual language learner. His teacher reported that he requires repetition and/or different teaching strategies when learning something new. Child 4 was also a dual language learner and was receiving special education services for both a speech/language delay and a general developmental delay. Figure 10.4 indicates that Child 3 made no gains in WPF and only moderate gains in FSF (+6). He also gained a few points in the TOPEL PK (+3), and although he did not make any gains on the TOPEL PA, his scores were above those of the comparison group (see Fig. 10.5). In contrast to Child 3, Child 4 made some noticeable gains in all measures, WPF (+10), FSF (+4), TOPEL PA (+2), and TOPEL PK (+19; see Figs. 10.4 and 10.5). His TOPEL PK posttest score was 14 points higher than the comparison group.

A preliminary but important conclusion is that the Tier 3 early literacy intervention resulted in gains for many students both with and without identified disabilities. Children who took longer to respond to the intervention or who showed smaller gains were often those who had behavioral challenges and were less engaged in the intervention. These children may take longer to

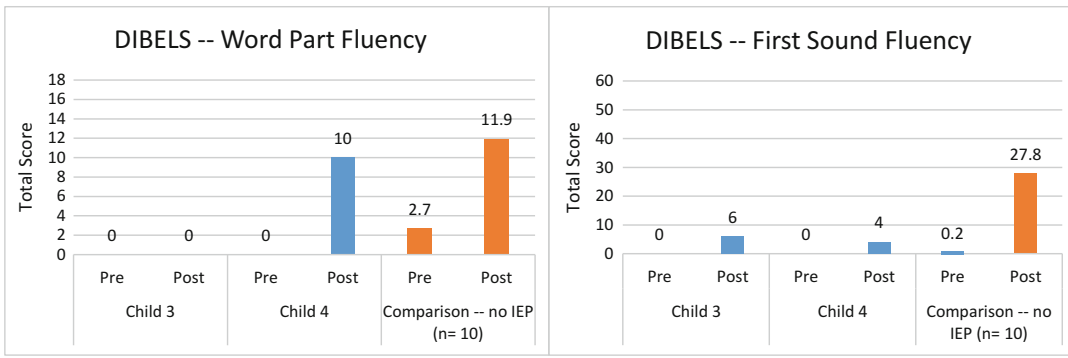

Fig. 10.4 Tier 3 pretest and posttest scores on the TOPEL—Phonological Awareness and Phonological Knowledge. Both Child 3 and Child 4 are children who participated in the T3 intervention and have IEPs. The comparison group is the average scores for children who participated in the intervention but do not have IEPs

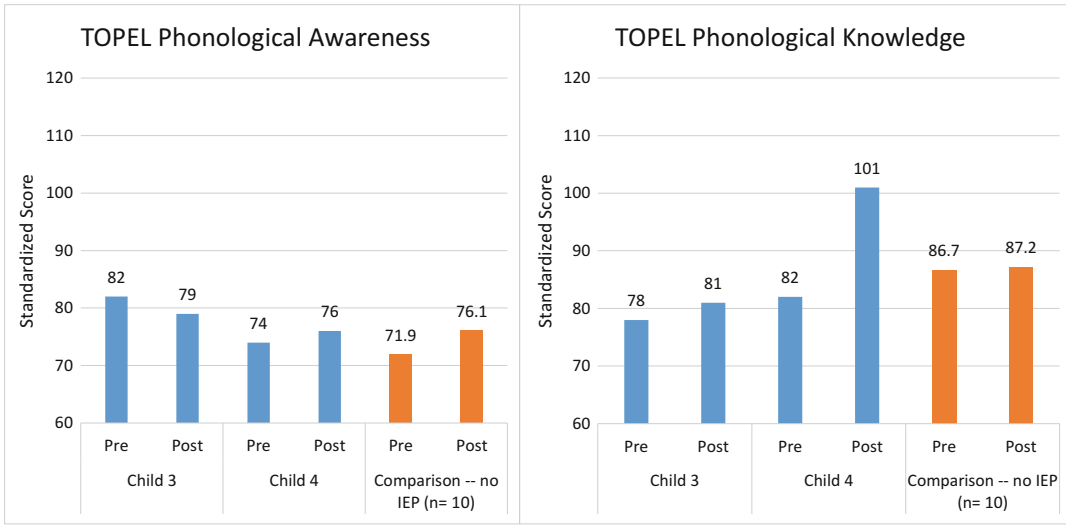

Fig. 10.5 Tier 3 pretest and posttest scores on the TOPEL for children with and without IEPs

respond because more time is needed to teach preliminary behaviors such as turn taking, following rules, and attending. As children learn the expectations, their opportunities to practice early literacy skills within the intervention typically increase and lead to increased skills. This points to two critical aspects of Tier 3 intervention for children with special needs: (1) that it requires skilled teachers to assure high-quality implementation to achieve maximum benefit and (2) that it should be flexible and responsive to the needs of individual children (Kaminski et al., 2014).

Conclusions

While we are just learning how best to implement RTI with young children, we are beginning to understand how tiered approaches such as this might effectively include children with special needs. Here are some lessons we have learned with regard to children with identified disabilities in our work:

1. While not all children receiving special education services show growth in early literacy and language, many children with identified disabilities have demonstrated growth in response to high-quality intentional instruction in these areas.
2. Universal screening and progress monitoring in early tiered models in early literacy and language afford a means of identifying children who might need more than the core curriculum and a mechanism for ascertaining quickly whether they are responding to higher tiers of intervention or require greater levels of intensity.
3. Some children who receive special education services demonstrate good progress in response to Tier 2 and Tier 3 interventions. Regular progress monitoring can help instructional teams determine when children are not showing adequate growth. Collaborative problem solving to identify barriers to individual children's progress might consider how well the intervention has been implemented, child variables that may be interfering (including behavioral management issues or adequacy of dosage of the intervention) or child variables such as language or attention.
4. Critical to all aspects of the model is high fidelity of implementation of every tier of the model.

While this factor is critical for RTI in general, it is fundamentally important to address the individual needs of young children with special needs. We have long known the many practitioner practices necessary to successfully and meaningfully include children into community-based early education programs: skills such as intentional teaching, data-based decision making, and collaborative consultation. Now with RTI systems that employ ongoing formative assessment, we have a framework to see whether those practices are moving children toward school readiness. These approaches have the potential for informing us not only about children's growth but whether our programs are making a difference for children with and without special needs.

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