Handbook of Response to Intervention in Early Childhood

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Recognition & Response

A Model of Response to Intervention to Promote Academic Learning in Early Education

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Early educators face important questions every day about the best way to respond to children with diverse learning needs enrolled in early care and education programs. They must decide which children need additional supports to learn and what teaching strategies work best to help these children acquire key readiness skills such as oral language, phonological awareness, print knowledge, and number concepts. Educators also must determine the nature and intensity of instruction—for example, whether it is better to work with these children individually or in small groups, how often this instruction should occur, and what information and curricular resources should be used as the basis of these instructional accommodations. Addressing the instructional needs of every learner is a widely held value in the early childhood field, but early educators generally lack guidance about the most effective way to respond to children who enter early childhood programs with varying abilities and opportunities to learn.

Trends in early education such as greater access to public prekindergarten (pre-K) and the increased emphasis on school readiness and early intervention have focused national attention on the need to improve the quality of early education practices for an increasingly diverse population of young learners (Peisner-Feinberg, Buysse, Benshoff, & Soukakou, 2011; Wesley & Buysse, 2010). As a part of a high-quality program, early childhood teachers ideally are expected to implement foundational instruction intended to meet the educational needs of all children while also making adjustments for some children who need additional instructional supports—for example, those with disabilities or learning or behavioral difficulties, and those from diverse cultural and linguistic backgrounds (Buysse & Wesley, 2010). School readiness skills addressing social-emotional development and academic learning in language, literacy, and mathematics are widely reflected in early learning and program standards at both the state and national levels and serve as broad learning benchmarks for every child.

An intensified focus on supporting diverse learners has helped advance an innovation known generically as tiered instruction, and more specifically as response to intervention (RTI)—a set of related practices in which early educators routinely gather information on children's progress in achieving school readiness

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skills and use this information to make instructional adjustments to ensure that every child can succeed. There is now a strong body of evidence on the effectiveness of using RTI to improve reading and math skills with school-age children and emerging evidence for its effectiveness to improve language and literacy skills with pre-K children (Buysse, Peisner-Feinberg, & Burchinal, 2012; Gersten et al., 2009; Gersten et al., 2008). However, the field is at an early stage in understanding exactly how this approach will work in early childhood programs and determining whether these instructional accommodations can actually improve instruction and benefit the children who receive them.

In this chapter we present Recognition & Response (R&R), a model of response to intervention (RTI) specifically designed for use with pre-K children and focused on their academic learning. Developed by researchers at the Frank Porter Graham Child Development Institute at the University of North Carolina at Chapel Hill, R&R was designed to help early educators use children's formative assessment results to plan and evaluate specific instructional strategies addressing children's school readiness skills. We begin with an overview of the entire R&R system and then focus more specifically on the response (instructional) component (see Chapter 8 for more information about the recognition [assessment] component of R&R). Next, we describe several issues related to implementation of R&R in early childhood center-based programs. We end with a summary of the research underway to evaluate the R&R model and identify future directions in this regard.

RECOGNITION & RESPONSE: A FRAMEWORK FOR LINKING ASSESSMENT AND INSTRUCTION

Although additional research is needed to guide its use and determine its efficacy, R&R has generated widespread attention in the early childhood field as a promising RTI model for pre-K (see entire issue of NHSA Dialog; Smith, 2009; the CONNECT Module 7 on tiered approaches [Buysse, Epstein, Winton, & Rous, 2012]; and the U.S. Health and Human Services, Administration for Children and Families, web site at http://www.acf.hhs.gov/programs/ohs/). Greenwood et al. (2011) described two available models of RTI for pre-K: R&R, which is focused on academic learning (Buysse & Peisner-Feinberg, 2010; Peisner-Feinberg et al., 2011), and the Pyramid Model, which is focused on children's social-emotional development (Fox, Carta, Strain, Dunlap, & Hemmeter, 2010).

R&R is a model of RTI designed for 3- to 5-year-old children enrolled in center-based early childhood programs, including Head Start, child care, preschool, and public pre-K (Buysse & Peisner-Feinberg, 2010; Peisner-Feinberg et al., 2011). R&R has a dual focus: improving the quality of instructional practices for all children as well as providing additional supports for some children to ensure that every child succeeds in school. Consistent with the broader RTI literature addressing students in K–12, R&R essentially involves gathering information on children's skills to help teachers plan and organize instruction, providing research-based interventions and supports, and monitoring progress in learning.

Figure 5.1 shows the conceptual framework for R&R. R&R is a tiered model of instruction, meaning that instructional strategies are arranged from most to least intensive to show the level of adult involvement that corresponds to children's needs for instructional supports. In accordance with the broader RTI literature,

Figure 5.1. Conceptual framework for the Recognition & Response model. (Copyright © 2011 by Virginia Buysse and Ellen S. Peisner-Feinberg. Reprinted by permission.)

R&R is conceptualized as a three-tier model that corresponds to the levels of prevention within the public health framework (i.e., core instruction [primary prevention], strategic interventions [secondary prevention], and intensive interventions [tertiary prevention]; see Chapters 2 and 3). The R&R components also correspond closely to those on which RTI is based: 1) systematic assessment of students' performance on academic skills, 2) scientifically based core programs and interventions, and 3) criteria for instructional decision making. The specific components of R&R are 1) recognition, which involves gathering formative assessment information by screening all of the children and monitoring their progress; and 2) response, which includes providing an effective core curriculum, intentional teaching, and tiered interventions linked to formative assessment results. As part of both the recognition and response components, a process called collaborative problem solving is used to support data-based decision making, plan interventions within different tiers, and assess how well children respond to these interventions.

Recognition: Formative Assessment

The recognition component consists of formative assessment of key academic areas that are predictive of later learning. Formative assessment is conducted by classroom teachers three times a year on a fall–winter–spring schedule. Classwide assessment results in the fall are used to determine whether some children need additional instructional supports, whereas assessment results in the winter and spring are used for progress monitoring. These data also are used by teachers to assess children's responses to tiered interventions and make decisions about the need for adjustments to planned interventions. Target children are selected for tiered interventions based on a predetermined criterion or cut point on the screening measure (e.g., those scoring below the 25th percentile), consistent with typical RTI practice. The formative assessment tools have unique properties that differ from assessment tools designed for other purposes such as developmental screening or diagnostic evaluation (see Chapter 8). A key distinction between formative assessment and assessment for other purposes is that formative assessment is designed to be used by classroom teachers for instructional planning, rather than primarily for diagnostic evaluation and determination of eligibility for special education.

Response: Research-Based Core Curriculum, Intentional Teaching, and Targeted Interventions

The response component refers to the core instruction offered to *all* children as well as the tiered interventions that are provided for *some* children who require additional instructional supports based on assessment results. The instructional component across tiers is additive: *all* children receive Tier 1 instruction; *some* children receive Tiers 1 and 2; and a *few* children receive Tiers 1, 2, and 3. Tier 1 involves providing an effective core curriculum, along with intentional teaching of key school readiness skills. In Tier 2, teachers enhance learning for some children through explicit, small-group instruction (i.e., 15 minutes per day over 8–10 weeks) using a research-based curriculum similar to a lesson format or standardized treatment approach. These small-group lessons are augmented by embedded learning activities that extend opportunities for developing these skills through tailored environmental arrangements, additional learning activities, and curricular modifications. Tier 3 consists of more intensive, research-based scaffolding strategies (e.g., response prompting, modeling, peer support) for a few children who require additional supports to learn. In keeping with the additive nature of tiered instruction, Tier 3 supports are provided in the context of both Tier 1 instruction and Tier 2 interventions (small-group lessons and embedded learning activities), which these children continue to receive.

CLOSER LOOK AT THE RESPONSE COMPONENT

In this section we take a closer look at the response component of R&R. For each of the three tiers we describe how the response component is designed to be implemented in an early childhood classroom.

Tier 1: Core Curriculum and Intentional Teaching

An effective core curriculum and intentional teaching are the foundation of instructional practices within R&R. An effective core curriculum is one that has

been evaluated through research (or based on a broader body of research), is developmentally appropriate, and covers all domains of learning, including academic learning and social-emotional development. Information about research findings for specific curricula in early childhood education can be obtained through the What Works Clearinghouse (U.S. Department of Education, 2007) and reports on research findings (e.g., Preschool Curriculum Evaluation Research Consortium, 2008). Intentional teaching means purposefully organizing the early learning environment and providing developmentally appropriate activities as part of a comprehensive curriculum to help children learn and develop key skills. It is critical that all children have ample opportunities to learn new skills throughout the curriculum and daily classroom activities and routines before teachers provide targeted interventions for some children. A key tenet of R&R and RTI is that an effective core curriculum along with intentional teaching should enable most children to make adequate progress in learning at Tier 1; however, it is important to note that both the composition of the classroom and nature of the early childhood program (e.g., a program in which the majority of children have disabilities) would affect the proportions of children who make adequate progress on the basis of foundational instruction and those who require tiered interventions to learn.

An early childhood program implementing R&R generally would continue using the core curriculum (e.g., *Creative Curriculum*, *HighScope*, *Opening the World of Learning [OWL]*) already in place in the district or program to serve as the foundation for the other components of the model. In our experience working with local programs across the country, adjustments to foundational instruction at Tier 1 often are needed prior to implementing R&R. For example, if a district or program prescribes a core curriculum but discovers that some of the teachers are not implementing it accurately or comprehensively, then the issue of how the curriculum is being implemented should be addressed prior to adding other components of tiered instruction such as formative assessment, tiered interventions, and collaborative problem solving. It may be necessary to make other adjustments to the early learning environment (e.g., materials, equipment, room arrangement), such as ensuring that interest centers provide sufficient and varied opportunities for children to interact with numbers and print, use writing materials, and develop oral language. Whole-group (e.g., circle time, music and movement activities, group read-alouds) and small-group activities (e.g., a writing activity designed for small groups of children, the addition of print materials to the dramatic play corner) and classroom routines (e.g., arrival, departure, transitions) represent additional contexts for teaching and learning key readiness skills that may require adjustments as part of the foundation for R&R and other tiered approaches. At Tier 1, it is critical that teachers offer many opportunities throughout the day for *all* children to participate in learning activities that are intentionally planned and linked to curriculum goals, as well as monitor, facilitate, and encourage *individual* children as needed to ensure active, full participation in these activities.

In addition to implementing an effective core curriculum and providing a high-quality learning environment, teachers should employ additional research-based practices such as dialogic reading. Because of its efficacy for improving oral language development for a broad group of children, dialogic reading should be implemented as a foundational early childhood practice and also considered an essential component of Tier 1 in conjunction with R&R. We have reviewed a number of commercially available early childhood core curricula and found that many

provide some, but not all, of the components of a dialogic reading approach as defined by the What Works Clearinghouse. Consequently, it may be necessary to add dialogic reading as foundational practice for all children at Tier 1.

Dialogic reading is designed to guide adults in using the most effective methods for reading storybooks to young children to ensure that that these experiences are both enjoyable and beneficial for children (see U.S. Department of Education, 2007, for a research synthesis on dialogic reading). Dialogic reading is a specific type of interactive storybook reading that relies on 1) specific prompts (**C**ompletion, **R**ecall, **O**pen-ended, **W**h- questions, and **D**istancing) and 2) a standardized sequence for delivering these prompts (**P**rompt, **E**valuate, **E**xpand, **R**epeat). It was designed to create a conversation with children and help them take an increasingly active role in storytelling over repeated exposures to the book. Research on dialogic reading was reviewed and summarized by the What Works Clearinghouse. The approach was found to have positive effects on children's oral language development and vocabulary skills, but no discernible effects on their phonological processing skills (U.S. Department of Education, 2007). A web-based module on dialogic reading drawing on information from the What Works Clearinghouse and Doing What Works (focused on translating research findings from the What Works Clearinghouse) is available for use within professional development (Buysse, Winton, Rous, Epstein, & Cavanaugh, 2011).

Although most young children are expected to make adequate progress with foundational instruction at Tier 1, others will need instructional accommodations to ensure that they are able to make progress in developing oral language and other academic skills prior to kindergarten. R&R specifies how these instructional supports are designed to work at Tiers 2 and 3.

Tier 2: Small-Group Lessons and Embedded Learning Activities

Two recent efforts aimed at summarizing the research knowledge on academic learning in pre-K are useful in identifying both foundational content and differentiated instructional practices that are relevant to designing tiered interventions. The National Early Literacy Panel identified the following as the strongest and most consistent predictors of later literacy achievement: alphabet knowledge, phonological awareness and memory, rapid automatic naming of letters and objects, and writing letters (NELP, 2008). In a report published by the National Research Council (NRC; Cross, Woods, & Schweingruber, 2009), the Committee on Early Childhood Mathematics identified two areas of mathematics on which to focus with pre-K children: 1) number, including whole numbers, operations, and relations; and 2) geometry, spatial thinking, and measurement. The committee recommended that a greater proportion of time be devoted to number and operations than to the other topics. In addition to defining key content areas for academic learning, both reports emphasized the need to employ a variety of effective instructional methods at different levels of intensity to address children's diverse learning needs, including small-group instruction and individualized scaffolding—both of which are consistent with key principles of RTI and R&R.

At Tier 2, the secondary level of prevention within R&R, teachers provide additional instructional supports for some children who need them as determined through the universal screening. The instructional supports provided at Tier 2

consist of two approaches: 1) daily small-group lessons and 2) embedded learning activities that take place outside these lessons.

Small-Group Lessons With respect to the first of these approaches, teachers implement small-group lessons with three to six children who have similar learning goals (e.g., learning letter names, developing vocabulary, recognizing letter sounds) using a research-based curriculum designed to complement (not repeat) the core curriculum used at Tier 1. The goal of the small-group lessons at Tier 2 is to provide additional opportunities for children who are struggling to learn core concepts and skills introduced at Tier 1 by providing explicit, teacher-directed small-group lessons that reinforce these same skills using targeted teaching activities in a more optimal learning context (i.e., providing learners with more individualized attention and support). To ensure that early childhood teachers implement R&R consistently within a particular program or district, it is necessary to specify the parameters of Tier 2 small-group lessons in terms of the intervention frequency, duration, and intensity, as well as to specify the procedures for how the lessons will be implemented within a small-group format. Separate sets of lessons should be specified for the fall and spring intervention periods, each covering approximately two months. In our research and work with local programs, the approach that has worked most effectively involves adopting a research-based supplemental curriculum that complements the core curriculum as the basis of the Tier 2 small-group lessons. The approach of adopting a domain-specific curriculum for use at Tier 2 is advisable largely because these curricula are widely available, are clearly specified with respect to implementation procedures, and are easily adapted for use within small groups at Tier 2 (e.g., contain a sufficient number of lessons that can be delivered in 15–20 minutes). Further, a number of these curricula have been evaluated through research and were found to be effective for pre-K children, or are based on research findings on early childhood curricula more broadly. The Tier 2 curriculum should consist of sequenced, structured lessons that target specific skills in key academic areas such as language, literacy, and math that are most predictive of later learning and academic achievement (NELP, 2008; NRC, 2009). The small-group lessons take place for approximately 15 minutes a day over 8–10 weeks while the rest of the class is engaged in other activities such as participating in interest centers under the supervision of a teaching assistant or another adult.

As an example, if a school district or program was already using *OWL* as their core curriculum in pre-K classrooms, then they would continue using the *OWL* curriculum and other foundational practices such as dialogic reading at Tier 1, but add a different curriculum (e.g., *Imagine It!*) at Tier 2 for use in supplemental instruction for groups of three to six target children. The supplemental curriculum selected for the Tier 2 small-group lessons should offer a clearly defined scope and sequence of skills that is highly similar to the core curriculum, addressing areas such as oral language, phonological awareness, print awareness, and alphabet knowledge, and employing code-focused and book reading activities that are appropriate and engaging for young learners. To ensure that small-group lessons last no longer than 15–20 minutes, it is necessary to make adaptations by selecting only the most relevant parts of the lessons (those that directly reinforce key content skills) for use at Tier 2. Most important, the supplemental curriculum selected for use at Tier 2 in this example should complement *OWL*'s strong emphasis on

these same language and literacy skills. We do *not* recommend employing a tutorial approach that consists of reteaching lessons or parts of lessons to small groups of children using the same core curriculum that constitutes foundational instruction at Tier 1, as this would not be a developmentally appropriate practice in pre-K.

It is important to distinguish the use of small-group instruction at Tiers 1 and 2, as we have observed this to be a growing source of confusion in the early childhood field. Most early educators and early childhood administrators are familiar with the concept of organizing instruction within small groups, but with the advent of RTI, traditional notions of small groups in early childhood classrooms as a way of promoting child-initiated learning have evolved and sometimes become enmeshed with newer concepts related to tiered interventions for children who require additional, explicit instructional supports. For example, some early childhood programs have replaced center time, an important foundational practice that provides children with the opportunity to make choices about the activities in which they participate, with "small-group time" in which children rotate through small groups involving explicit, teacher-directed instruction on academic skills, often relying on teacher-generated activities that do not follow a particular scope and sequence as part of a structured curriculum.

Within R&R, we distinguish the use of small groups at Tiers 1 and 2 along three dimensions: the way in which small groups are formed, the context and focus of instruction, and the teacher's role. At Tier 1, small groups take the form of flexible, child-initiated activities in interest centers (e.g., children choose activities in the book corner, the art center, dramatic play, or block area and are free to make a transition to a new center or activity as they desire) that are carefully planned to address broad curriculum goals across many domains to meet the learning needs of all children. In addition to organizing these activities within the early learning environment, the teacher's role is to observe and monitor children's participation in these learning activities, and to encourage and facilitate learning among individual children or small groups as needed. By contrast, the target children who participate in small-group instruction at Tier 2 are selected on the basis of individually administered formative assessment results, instruction focuses on specific skills within key content areas (e.g. language, literacy, mathematics), and the teacher's role is to teach academic skills explicitly using a structured lesson format that is developmentally appropriate. Table 5.1 summarizes these key distinctions in small groups at Tiers 1 and 2.

Embedded Learning Activities   The second approach, which is specified within the R&R model at Tier 2, consists of embedded learning activities that are designed to complement and extend small-group instruction. Embedded learning activities offer children additional opportunities to practice, generalize, and maintain targeted skills that they acquire within the small-group lessons. Teachers intentionally plan and create embedded learning activities that are tailored to children's individual learning needs as part of the collaborative problem-solving process, rather than relying on a standardized set of activities. Teachers then embed these activities within various teaching and learning contexts such as whole-group activities, child-initiated activities, center time, and daily classroom routines (e.g., meal time, transitions). Although embedded learning activities are available and appropriate for all children in the classroom to use, teachers plan them specifically

Table 5.1. Differences between the use of small groups at Tiers 1 and 2 within Recognition & Response

	Tier 1	Tier 2
Way groups are formed	Child choice primarily determines how groups are formed. Small groups vary by size and composition with respect to children's interests and ability levels.	Selection of target children is informed by formative assessment and determined through collaborative problem solving. Small groups consist of a limited number of children (three to six) who have similar learning goals.
Context and focus of instruction	Various activities are planned by the teacher to address certain thematic concepts and/or broad curriculum goals that are designed to meet the needs of all children. Instruction is implemented primarily as child-initiated activities in interest centers such as the book center, the art area, a writing table, dramatic play, blocks and puzzles, and the science center.	Focus is on a set of specific skills within a certain content area (language, literacy, or math). Instruction consists of 15- to 20-minute daily lessons that are structured and sequenced and include developmentally appropriate activities and materials for prekindergarten children.
Teacher's role	Observe and monitor all children's participation in various learning activities; encourage and facilitate participation and learning as needed.	Explicitly teach lessons to target children using research-based curricula or instructional strategies. Systematically monitor progress of target children through formative assessment and make instructional adjustments as needed.

for children who receive the Tier 2 small-group lessons. The process we recommend teachers use in implementing embedded learning activities in early childhood classrooms consists of the following steps: 1) identify the specific skills within a particular domain being targeted as the content of the embedded learning activity (e.g., oral language, number concepts, rhyming, alliteration, alphabet knowledge); 2) determine the specific teaching and learning context (e.g., learning environment, whole group, child-initiated and interest centers, classroom routines); 3) select embedded activities to support the targeted skill areas (e.g., incorporating books that emphasize specific letter sounds, making alphabet games available during center time that include the letters introduced in a small-group lesson, adding a flannel board with story props for a book introduced during a small-group lesson); and 4) define the teacher's role in terms of monitoring, encouraging, or facilitating children's active engagement in these activities. In our work, we have provided teachers with planning forms to keep track of activities they plan to implement and to document children's exposure to these activities.

Tier 3: Individualized Scaffolding Strategies

At Tier 3 within R&R, teachers provide individualized scaffolding for a few children who require intensive supports as indicated by progress monitoring conducted at Tier 2. Scaffolding strategies are structured, targeted approaches that early educators can use with children who require more intensive supports across a wide range of teaching and learning contexts, and in combination with other approaches (e.g., as part of assistive technology or embedded interventions; Buysse, 2011). As

mentioned earlier, children who receive Tier 3 individualized scaffolding also continue to receive both Tier 2 interventions (i.e., small-group instruction and embedded learning) and the foundational instruction that all children receive at Tier 1. The research literature is replete with information on the effectiveness of different types of scaffolding strategies and various combinations and hybrid approaches for use with young children with developmental delays (e.g., Chiara, Schuster, Bell, & Wolery, 1995; Craig-Unkefer & Kaiser, 2002; Gibson & Schuster, 1992; Girolametto, Weitzman, & Greenberg, 2004; Hancock & Kaiser, 2006; Hawkings & Schuster, 2007; Kaiser, Hester, & McDuffie, 2001; Kouri, 2005; Ostrosky & Kaiser, 1995; Ross & Greer, 2003; Walker, 2008; Wolery, 2000). However, the use of scaffolding strategies within tiered models of instruction in the context of general early education is relatively new. All of these individual scaffolding strategies have been organized under several broad categories to create a more practical framework for applying these approaches within R&R. These categories include modeling, response prompting, peer supports, and corrective feedback. Table 5.2 describes the primary scaffolding strategies used at Tier 3 within R&R. Table 5.3 describes additional behavioral supports that teachers can use in conjunction with the primary scaffolding strategies for children who exhibit problems with behavior regulation.

The process we recommend teachers use in implementing Tier 3 scaffolding strategies consists of the following steps: 1) use formative assessment results to

Table 5.2. Tier 3 individualized scaffolding strategies

Type of scaffolding	Definition	Example
Modeling	An instructional strategy in which a teacher demonstrates specific responses	During a rhyming matching game with a child, the teacher demonstrates finding two picture cards that show rhyming words for the child.
Response prompting	An instructional strategy in which a teacher uses verbal and nonverbal cues to elicit a response from a child	While retelling a story following a shared reading activity, the teacher intentionally sequences the story events incorrectly and asks, "Is that what happened in the story?" When the child does not respond to the incorrect sequence, she points to the picture in the book depicting the first event and asks the question again.
Variations of modeling and prompting	Variations include increasing or decreasing the level of assistance, adding wait time, and combining strategies	During an alphabet game, the teacher asks a child to identify the first letter on his or her name card. When the child gives an incorrect response, the teacher increases her assistance by modeling the sound of the letter. When the child still does not respond, she models the letter sound while pointing to the correct letter in an alphabet chart and then asks the child again to find the letter on the name card.
Peer supports	An instructional strategy in which peers support another child in learning	When prompted by the teacher, a peer demonstrates the use of a vocabulary word for another child.
Corrective feedback	Instructional strategies that reinforce correct responses and address incorrect responses and nonresponses	For a request to point to a picture showing a dog, a child responds incorrectly or does not respond. The teacher then points to the right picture and says, "Here is the dog."

Table 5.3.   Tier 3 behavioral supports

Supplemental supports for Tier 2 small-group lessons	Example
Space/positioning arrangements	During the small-group activity, the teacher strategically positions a child who needs additional supports next to a peer who will help with some of the small group's activities.
Use of visual supports	At the beginning of a lesson, the teacher uses picture cues depicting behavior rules for participating in the activities (e.g., ear symbol reminds child to listen, stop symbol reminds child to wait for teacher to finish reading the story).
Communicating behavior expectations	In response to a child getting distracted during a lesson, the teacher verbally reminds him or her what will be happening next to redirect his or her attention to the group tasks.

determine which children need additional instructional supports (e.g., children who make little or no progress in acquiring key skills after one round of intervention at Tier 2), 2) determine which scaffolding strategies will be added to the small-group lessons and embedded learning activities (e.g., response prompting and peer supports with corrective feedback), 3) implement the scaffolding plan over a predetermined period (e.g., several weeks), and 4) use formative assessment results to adjust the scaffolding plan as needed.

IMPLEMENTATION ISSUES

Because R&R (and RTI more broadly) represents a set of related practices in the early childhood field, a number of decisions must be made to support its implementation in early care and education programs. A number of these decisions, such as selecting appropriate formative assessment tools and tiered interventions, will need to be made at the program or district level rather than by individual teachers, with input from key stakeholders such as administrators, practitioners, and families. In addition to making these key decisions, teachers will need professional development and ongoing supports through approaches such as coaching, consultation, and mentoring to ensure that they are equipped with sufficient knowledge and skill to implement assessment and intervention practices. Furthermore, early educators will need the full support of administrators, specialists, and families as members of collaborative problem-solving teams, an important mechanism that will need to be established to support data-based decision making within R&R. Drawing on recommendations from the concept paper on RTI in early childhood published by the National Professional Development Center on Inclusion (2012), issues that need to be addressed prior to implementation of R&R fall within three broad categories:

1. **Strategic planning process:** Programs that adopt R&R or another model of tiered instruction will need to engage in a planning process prior to implementation. Careful consideration should be given to who will be involved in the planning effort, how decisions will be made, and how logistics will be handled, such as obtaining administrative approvals and creating timelines for implementation.

2. **Decisions regarding the assessment and instructional components:** Key decisions will need to be made early in the planning process related to the context and scope of implementation. Will R&R be implemented with children from birth to age 5 or limited to pre-K children? Will R&R be implemented in a select number of demonstration sites initially versus implementing it more broadly across an entire system? What aspects of academic learning will be the focus of the R&R program, and will behavioral supports be incorporated within this approach? What formative assessment tools will be applied and what criteria will be used for determining children who need tiered interventions (e.g., selecting children for the first round of Tier 2 interventions based on those who score below the 25th percentile, selecting children who score in the bottom 50th percentile to receive two rounds of Tier 2 interventions)? What research-based curricula and tiered interventions will be used? How will practitioners collaborate with specialists and families to support data-based decision making?

3. **Infrastructure supports:** Planners should determine how practitioners will receive professional development and ongoing support for implementation of R&R. In addition, they should specify the collaborative problem-solving process, allocate time and resources to support these collaborative efforts, and determine how information will be shared about children's development with families and other professionals. Finally, planners should make provisions for evaluating the implementation and effectiveness of R&R.

RESEARCH EVIDENCE

Results from two small-scale, quasi-experimental studies offer evidence of the promise of the R&R model for improving children's language and literacy skills, with significant effects found across a variety of outcome measures in both studies (Buysse, Peisner-Feinberg, & Burchinal, 2012). The initial study (Study 1) included 24 pre-K classrooms and 320 4-year-old children in community-based early childhood programs. The second study (Study 2) included 24 public school pre-K classrooms and 354 4-year-old children. Seventy-five percent of the teachers in Study 1 and all of the teachers in Study 2 had a bachelor of arts degree or higher. About one half of the children in Study 1 and nearly all of the children in Study 2 were from low-income families. For both of these studies, teachers implemented the R&R model in the area of language and literacy development, including the assessment and tiered instruction components.

Results from these two studies provide evidence of the feasibility of implementation and usability of the R&R model. Observations of the tiered interventions showed that teachers could implement this component with high fidelity across the two studies. Mean scores on the implementation fidelity rating were 97% and 91% (Study 1 and 2), based on multiple (three to five) observations of each teacher conducting the Tier 2 interventions. In addition, teacher ratings indicate that they found the R&R system feasible and useful. In both Study 1 and 2, respectively, the vast majority of teachers rated the components as easy to use (assessment: 88%/90%; intervention: 96%/77%) and helpful (assessment: 96%/100%; intervention: 92%/90%), and indicated that they would recommend the R&R system to colleagues (92%/84%).

These studies also showed positive evidence of the promise of R&R for improving children's language and literacy skills, both in terms of formative assessments and norm-referenced measures. The amount of growth (pre- to post-intervention) exhibited by target children receiving the tiered interventions versus a comparison group of their classmates was examined. Target children made significantly greater gains than comparison children in language and literacy skills in both studies, with effect sizes predominantly in the low to moderate range for significant comparisons (range = .24 to .40). In Study 1, target children made greater gains in vocabulary and phonological awareness (based on formative assessments) and on print knowledge (based on a norm-referenced measure), and made similar gains in other areas. In Study 2, target children made greater gains in vocabulary and phonological awareness (based on formative assessment) and receptive and expressive language (based on norm-referenced measures), and made similar gains in other areas.

Across these two pilot studies, the results suggest that the R&R system offers evidence of promise for improving language and literacy outcomes for young children. Positive effects were found in the growth rates for target children compared with their peers on formative assessment and standardized measures in both studies. Although target children had substantially lower scores initially as well as after the intervention, their rates of growth were greater than or the same as those of comparison children. These results indicate that through the assessment and intervention components, teachers who used the R&R model were able to successfully identify target children for the interventions (i.e., those with significantly lower skill levels than their peers), and potentially to alter their developmental trajectory so that they began catching up to their peers in some areas while maintaining pace in others. Moreover, positive effects were found across different populations of children; although Study 2 included a relatively more disadvantaged population, as evidenced by their background characteristics and fall assessment scores, the model had positive effects for target children in both studies. Not surprisingly, stronger effects were found in critical areas of receptive and expressive language skills when R&R was implemented under more ideal conditions (i.e., a full year rather than one semester, with more highly educated teachers). Although these two pilot studies did not provide the opportunity for a true control group, the results clearly provide empirical evidence of the promise of R&R as an educational intervention for pre-K. Future studies are planned or underway to conduct a randomized control trial to evaluate the efficacy of R&R for improving pre-K children's language and literacy skills. Additional research also is needed to examine the differential effects of interventions at Tiers 2 and 3 and to develop and test other adaptions of the model for mathematics instruction and for use with dual language learners.

CONCLUSION

The use of RTI practices to support learning and development in children prior to kindergarten has generated widespread interest within the early childhood field. R&R is an emerging practice in early childhood based closely on the principles of RTI and adapted for younger children in early care and education programs. R&R holds promise for supporting learning and development prior to kindergarten,

but additional research is needed to provide evidence of the effectiveness of this approach. This chapter focused on the response component of R&R—the core instruction and intentional teaching that all children receive as well as the targeted interventions and supports that some children require in order to learn. Early educators who plan to implement R&R will need to ensure that this approach complements effective practices and services already in place and adds value by providing additional supports for children who need them. Systemic supports such as ongoing, effective professional development are essential to ensure that R&R is implemented appropriately and is beneficial for young children and their families.

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