



Response to Intervention in Kindergarten: supporting foundational and comprehension skills with supplemental instruction

Response to Intervention en preescolar: apoyo a las competencias básicas y de comprensión con instrucción complementaria

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Response to Intervention en preescolar: apoyo a las competencias básicas y de comprensión con instrucción complementaria

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Abstract

Response to Intervention (RtI) is a multi-tier approach to the early identification and support of students with learning needs. Although there is not a single definition or agreed-upon way of implementing RtI, the key features of this approach involve gathering information on students' skills to help teachers plan and organize instruction, providing evidence-based interventions and supports, and monitoring student progress in learning (Gersten et al., 2008). The Institute of Education Service (IES) published practice guides to offer educators specific evidence-based recommendations for supporting reading skills to students in kindergarten through 3rd grade. These guides were used as a framework to plan and implement instructional activities that were intended to support the literacy development of students in a kindergarten class

Resumen

Response to Intervention (RtI) es un enfoque multinivel para la identificación temprana y el apoyo de estudiantes con necesidades de aprendizaje. Aunque no existe una definición única o una forma acordada de implementar RtI, las características clave de este enfoque incluyen la recopilación de información sobre las habilidades de los estudiantes para ayudar a los maestros a planificar y organizar la instrucción, proporcionando intervenciones y apoyos basados en evidencia y monitoreando el progreso del estudiante en aprendizaje (Gersten et al., 2008). El Instituto de Educación del Servicio (IES) publicó guías de práctica para ofrecer a los educadores recomendaciones específicas basadas en evidencias para apoyar las habilidades de lectura a los estudiantes de jardín de infantes a tercer grado. Estas guías se usaron como marco para planificar e implementar actividades educativas que tenían como objetivo apoyar el desarrollo de la alfabetización de los estudiantes en una clase de preescolar.

Keywords

Intervention; Early reading development; Early childhood education

Palabras clave

Intervención; Desarrollo lector temprano; Educación de la primera infancia

1. Introduction

To support reading proficiency, students need explicit instruction in two related sets of skills: foundational reading skills and reading comprehension skills (Foorman et al., 2016). The foundational skills are a necessary and important component of a comprehensive reading program designed to develop proficient readers who comprehend texts across a range of types and disciplines (National Governors Association Center for Best Practices & Council of Chief State School Officers (NGA/CCSSO), 2010). The National Reading Panel (2000) has identified a set of foundational skills students must master before they can become fluent readers: phonemic awareness, phonics, vocabulary, fluency, and comprehension. Comprehension uses the four other components to make meaning from texts. Research confirms that problems with foundational skills and comprehension represent a major barrier for many students in learning to read (Dewitz & Jones, 2013; Pressley, 2006; Torgesen, 2002).

Reading comprehension is the process of constructing meaning from written texts. One of the key requirements of the Common Core State Standards for Reading in the United States is that all students must be able to comprehend texts of steadily increasing complexity as they progress through school (NGA/CCSSO, 2010, p.2). To support reading development in kindergarten eligible children (4.9-5.11 years), students should participate in collaborative conversations with diverse partners, comprehend texts read aloud, and ask and answer questions as appropriate to their developmental level. These skills are key to early reading success as they connect and build upon each other.

1.1. Response to Intervention

Response to Intervention (RtI) is a comprehensive intervention and prevention strategy that identifies and assists struggling students before they fall behind. RtI systems combine universal screening and high-quality instruction for all students with interventions targeted at struggling students (Gersten et al., 2008). It is a multi-tiered approach that is used to differentiate instruction for all students. The model incorporates increasing intensities of instruction offering specific, research-based interventions matched to student needs.

RtI is a general education initiative designed to address the needs of struggling learners as early as possible. The RtI process is student-focused and personalized. According to the National Center for Learning Disabilities (nd), the three-tiered model is described as:

Tier 1: High-Quality Classroom Instruction, Screening, and Group Interventions

Within Tier 1, all students receive high-quality, scientifically based instruction provided by qualified personnel to ensure that their difficulties are not due to inadequate instruction.

Tier 2: Targeted Interventions

Students not making adequate progress in the regular classroom in Tier 1 are provided with increasingly intensive instruction matched to their needs on the basis of levels of performance and rates of progress.

Tier 3: Intensive Interventions and Comprehensive Evaluation

At this level, students receive individualized, intensive interventions that target the students' skill deficits.

2. Purpose of the study

Children at risk for reading difficulties does not necessarily denote that they will be poor readers throughout their school years. It does, however, specify that they may need prompt and appropriate intervention as well as close monitoring to ameliorate the deficiencies and to prevent future reading difficulties. While many practitioners understand the overall purpose of RtI and the instructional goals at each tier, it is a challenge to implement the recommended instructional supports at tier 2 and 3.

The purpose of this study was to determine if supplemental and individual instruction supported a child, considered at risk for reading difficulties, in achieving age-appropriate levels of literacy development. The objectives of this case study were to chart the developmental progression of a child considered at risk over the course of a kindergarten school year using Rtl strategies.

2.1. Research questions

1. Does providing supplemental and individual instructional time support levels of achievement in literacy development for a child considered at risk for reading development?
2. Do children in the same class, who do not receive the individual instruction time, achieve similar levels of achievement in literacy development?

3. Theoretical framework

Response to Intervention (Rtl) is a multi-tier approach to the early identification and support of students with learning needs. Rtl is the practice of providing quality instruction and intervention and using student learning in response to that instruction to make instructional and important educational decisions (Batsche et al., 2005). Although there is not a single definition or agreed-upon way of implementing Rtl, the key features of this approach involve gathering information on students' skills to help teachers plan and organize instruction, providing evidence-based interventions and supports, and monitoring student progress in learning (Gersten et al., 2008).

One of the most important aspects about Rtl is that it is considered to be a process, not a program (Buffum, Mattos, & Weber, 2009). The Rtl process begins at Tier 1 with universal screening followed by high-quality instructional practices for all children in the general education classroom. The screening supports teachers in working with students in small groups based on their skill/developmental levels. All students are taught using instructional methods that are research-based and have been shown to be effective.

Tier 2 interventions are provided to students who demonstrate potential for reading difficulties based on screening. In addition to general classroom instruction, tier 2 students receive supplemental, small group reading instruction aimed at building foundational reading skills (Gersten et al., 2008).

Tier 3 interventions are provided to students who do not progress after a reasonable amount of time with the tier 2 intervention and require more intensive assistance.

They receive one-on-one instruction or work in very small groups. If the child does not make adequate progress in Tier 3, it is likely that the teacher will recommend an evaluation for special education services.

Although Hughes and Dexter (2011) examined the impact of Rtl programs on academic achievement and determined that there is emerging evidence that a tiered early intervention approach can improve the academic performance of at-risk students, Rtl research is ongoing and the research base is still not definitive for essential aspects of Rtl (Burns, 2010).

4. Methods

The Institute of Education Service (IES) published practice guides to offer educators specific evidence-based recommendations for supporting reading skills to students in kindergarten through 3rd grade. These guides, *Assisting students struggling with reading: Response to Intervention and multi-tier intervention for reading in the primary grades* (Gersten et al., 2008), *Improving reading comprehension in kindergarten through 3rd grade* (Shanahan et al., 2010) and *Foundational skills to support reading for understanding in kindergarten through 3rd grade*

(Foorman et al., 2016) were used as a guide to plan and implement instructional activities that were intended to support the literacy development of a kindergarten student considered at risk on a baseline assessment.

4.1. Participants

Teacher

The general education teacher in the observed classroom has permanent certification in early childhood (birth-2nd grade) and childhood (1st-6th grade) education in New York state (USA). She has over 10 years teaching experience in urban settings. She has taught 1st and 2nd grades and is currently teaching kindergarten, which she has been in for the past 5 years. She has taught at her current site for 5 years.

School and classroom

The school is located in a mid-sized urban district in upstate New York (USA) that has approximately 34,000 students. The school district has 45 elementary schools (prekindergarten-grade 8). The observed kindergarten classroom consisted of 23 students. Twelve percent of the students were identified as a student with a disability (SWD) and 38% were identified as students whose primary language is not English (ENL).

Student teacher

The student teacher is an undergraduate student preparing for certification in early childhood education at a large public university in upstate New York. She is the school-based teacher aide assigned to work in the early childhood classrooms (prekindergarten and kindergarten). She has been working at the school for 2 years.

Child

The student entered the kindergarten class with no prior classroom experience and was 4.3 years old at the time of the baseline assessment. She lives in a home with an extended family: Mother, father, grandmother, uncle and a younger brother. The primary language spoken at home is English. She is not considered a SWD or an ENL student.

4.2. Data sources

Screener

The IES practice guide (Shanahan et al., 2010) offers recommendations for helping elementary schools implement an RtI framework. Recommendation #1 suggests that schools screen all students for potential reading problems at the beginning of the year and again in the middle of the year. The Texas Primary Reading Inventory (TPRI) is a reliable early reading assessment designed to identify the reading development of students in kindergarten through third grade. This diagnostic tool is a one-on-one assessment, which helps teachers provide targeted instruction. The kindergarten TPRI assesses children on phonemic awareness, graphophonemic knowledge and listening comprehension. The TPRI was used as the benchmark assessment and was given three times during the 2016-'17 school year for the case study child. It was also used as a pre- and post-assessment for the remaining students in the kindergarten class.

Fountas & Pinnell reading levels

The IES practice guide (Shanahan et al., 2010) recommends that schools should provide time for differentiated reading instruction for all students based on assessments of students' current reading level. The Fountas & Pinnell (F&P) Benchmark Assessment System (BAS, 2010) was used to determine student's independent and instructional reading levels. Formative assessments determined the monthly progress of each student.

Observations

The classroom teacher and student teacher were observed during whole group, small group and one-on-one instruction. The incidental and intentional vocabulary instruction, types of questions, and before, during and after reading comprehension strategies were documented

throughout the 2016-'17 school year.

5. Results

5.1. TPRI: Beginning of year (BOY)

The TPRI assessment was given to all students in the kindergarten classroom (N=23) in the fall of 2016.

Phonemic awareness (PA)

The BOY assessment results determined that 71%, 79%, and 83% of the kindergarten children were still developing (SD) on measures of expressive rhyming, blending word parts, and blending phonemes respectively. The TPRI assessment also determined that the case study child was SD on these PA skills.

Graphophonemic knowledge (GK)

The TPRI assessment determined that 58% of the kindergarten children were unable to identify 20 or more upper case letters with students identifying an average of 14 upper case letters. The case study child was able to correctly identify 15 upper case letters. The case study child did not correctly identify the minimum number of letters to be assessed on sound-letter identification.

Listening comprehension (LC)

The TPRI assessment determined that 79% of the kindergarten children were SD on listening comprehension. The case study child was also SD on this skill.

F&P reading level

The baseline F&P BAS determined that 92% of the kindergarten children were considered pre-emergent readers at the BOY. The case study child was considered a pre-emergent reader on the F&P BAS through December 2016.

5.2. TPRI: Middle of year (MOY-case study only)

Phonemic awareness (PA)

The MOY assessment results determined that the case study child had developed PA skills in rhyming (4/5) and blending word parts (5/5). Even though the case study child was considered SD on blending phonemes, this skill was emerging (3/5).

Graphophonemic knowledge (GK)

The case study child identified all 26 upper and lower-case letters and was assessed on letter-sound knowledge. It was determined that the child has developed GK (10/10).

Listening comprehension (LC)

The case study child was able to recall and link details as well as infer word meaning and was considered developed (6/6) on this skill.

F&P reading level

The case study child was still considered a pre-emergent reader on the F&P BAS through March 2017.

5.3. TPRI: End of year (EOY)

The EOY TPRI assessment was given to all students who were assessed in the BOY (N=17). Chart 1 depicts the BOY and EOY assessments results.

Phonemic awareness (PA)

The EOY assessment results determined that 47%, 59% and 53% were considered developed on measures of expressive rhyming, blending word parts, and blending phonemes respectively.

Graphophonemic knowledge (GK)

The EOY assessment determined that 82% and 71% of the students were considered developed on letter identification and letter-sound knowledge respectively.

Listening comprehension (LC)

The EOY assessments determined that 79% of the students were able to recall and link details as well as infer word meaning from a passage read to them.

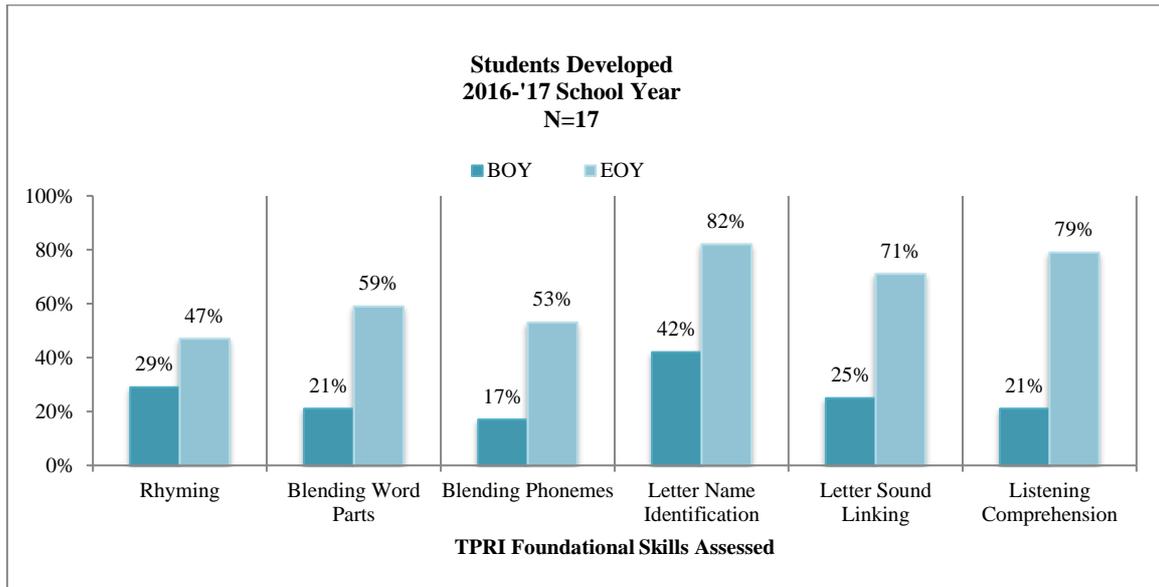


Chart 1. End of year results for kindergarten children

F&P reading level

The EOY F&P BAS determined that the case study child was at level B and that 43% of the kindergarten children were at the target level D or above. Chart 2 shows the range of reading levels for the kindergarten children over the course of the school year.

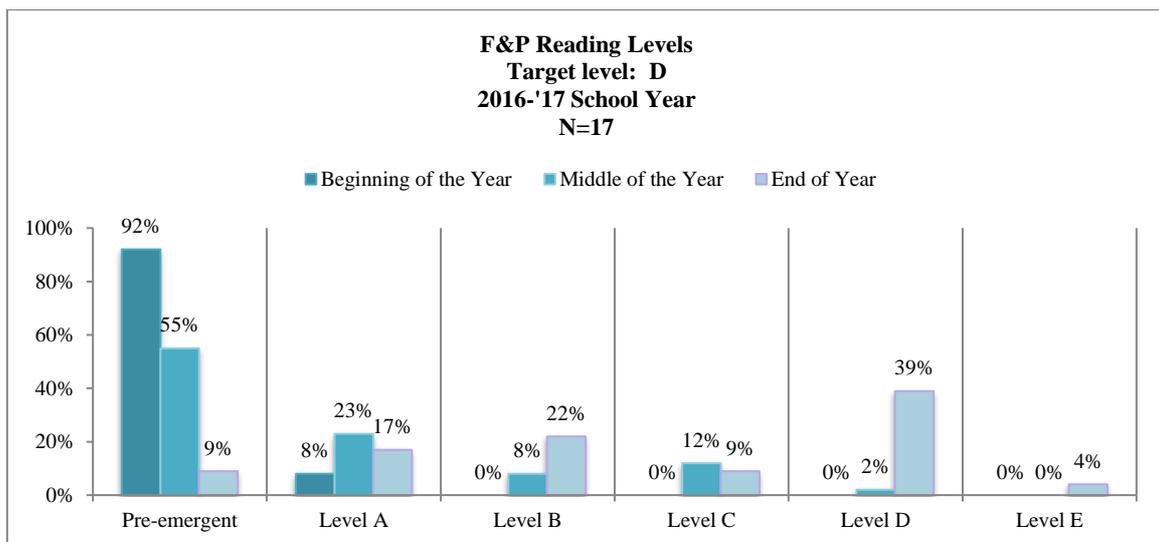


Chart 2. Fountas and Pinnell reading levels

6. Discussion

While screening and progress monitoring are essential components of the assessment process of Rtl, it is the supplemental and intensive instruction during tiers 2 and 3 that supports students who are identified at risk for reading difficulties. The following section discusses the instructional supports that were aligned with the IES practice guide recommendations.

6.1. Tier 1

Tier 1 instruction is generally defined as instruction provided to all students in a general education classroom. A recommendation from the IES practice guide (2016) is to engage students in conversations that support the use and comprehension of inferential language (p.8) and teach academic vocabulary in the context of other reading activities (p.11). Table 1 shows the documentation of an observed whole group lesson in October (2016) incorporating the Common Core State Standards foundational skills during a shared reading experience.

Table 1.
 Sample observation of foundational skills

Foundational Skill	Observed Practice
Print Awareness	Teacher supports students in differentiating between upper and lowercase letters and punctuation marks as she is reading the text to the class.
Phonemic Awareness	After reading the text, teacher encourages children to give words that begin with the /m/ sound. Teacher writes words and draws corresponding pictures on chart paper.
Word Recognition	Before, during and after the reading, teacher uses word cards to reinforce identified vocabulary. Teacher encourages children to link vocabulary words to characters in the story (connection).
Fluency (expressive)	Teacher prompts students with appropriate questions to support expressive fluency and uses follow up questions that provided feedback to student's answers.

Observation of focus child

During this whole group lesson, the focus child sits quietly and appears to be following along as she answers question in unison with other children. The teacher does not single her out to answer questions. She does not ask questions.

6.2. Tier 2

A recommendation from the IES practice guide (2010) is to teach students how to use several research-based reading comprehension strategies (p.12). While there was no identified research-based curriculum used in the kindergarten classroom, evidence-based strategies were used to support students during small group instruction. Table 2 is a sample of the documentation on how the teacher guided the students through high-quality discussion using comprehension strategies that supported predicting, vocabulary, monitoring and repairing, visualization and inference.

Table 2.
Sample observation of comprehension strategies used

Comprehension strategy	Example
Predicts and Questions	"What is the title of the book?" "What do you think the book is going to be about?" "Why do you think it is going to be about plants?" "What do you notice the girl is doing?"
Vocabulary	Incidental vocabulary: <i>repeat, soil, stem</i> Intentional vocabulary: <i>pattern, survive</i>
Monitors and Repairs Comprehension	"Can you tell me the sound that letter p makes?" "Why doesn't that word say dirt (soil)?"
Visualizing	"What do you notice that the girl is holding in her hand?"
Inference	"What do you think the girl is going to say?"

Source: Grow, flower grow by Lisa Bruce (1999)

Observation of focus child

During small group differentiated instruction, the focus child was grouped with other students who were pre-emergent readers. She answered questions related to the shared reading and comprehension strategies. Table 3 is an example of the teacher/child interaction:

Table 1.
Sample conversation

Teacher: "Does anyone know what we need to grow a plant?" Focus child: "Dirt." Teacher: "Does anyone know another word for dirt?" Another child: "Soil." Teacher: "What do we need to do with the soil to help the plant grow?" Focus child: "Water." Teacher: "What can happen if we give the plant too much water?" Focus child: "The plant will not grow."
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Supplemental support for focus child

During independent small group time, the student teacher was able to support a group of students with receptive and expressive rhyming activities. Although this was not an identified time to support students at the tier 2 level, the student teacher was able to provide additional guidance with the foundational skills. Table 4 shows the sample documentation of the questions the student teacher asked to support the development of rhyming.

Table 2.
Sample conversation

Receptive	Differentiation	Expressive
Student teacher and students discuss words that rhyme: "Rhyming words have the same ending sound. Cat, bat, hat, fat have the same ending sound. Rhyming words have the same ____ (teacher prompts students to say <i>ending sound</i>)."	Student teacher and students distinguish between words that rhyme and words that do not rhyme: "Cat, hat rhyme, but cat, ball do not rhyme. Cat, ball do not have the same ending sound."	Student teacher encourages student to provide a rhyming word for identified word, "Cat, hat, bat rhyme. Can you give me another word that rhymes with cat, hat, bat?"
<i>Comprehension:</i> Student teacher asks students: "Which word does not rhyme with the other: cat, hat, ball, fat?"		

6.3. Tier 3

A recommendation from the IES practice guide (Gersten et al., 2008) is to provide intensive instruction to students who need additional support with the foundational skills. The observed

classroom did not provide the recommended intensive instruction to students who showed minimal progress after reasonable time during tier 2 small group instruction.

Intensive support for focus child

The student teacher was able to provide more intensive support for the focus child during opportune times throughout the day. For example, the child did not eat breakfast and during that time she was able to work on alphabet knowledge and sight words in the fall. Table 5 shows some of the activities the student teacher engaged the focus child in for support at Tier 3.

Table 5.
Sample support activity

Alphabet knowledge	Sight words
Matching upper- and lower-case letters with magnets Using SMART board to match and write letters	Song: <i>Jump out words</i> Fishing for sight words Sight word swat

7. Conclusion

Rtl tiered interventions provide additional instructional support and intensity for students who do not reach age-appropriate levels after core classroom instruction. Each tier of intervention is provided as a supplement, not as a substitute, to the core instruction at Tier 1. Tier 2 is meant to provide a limited, but targeted, support system for students who struggle to meet grade-level performance standards. The general goal of Tier 2 intervention is to strengthen students' academic performance to a level that supports their success at Tier 1. Effective Tier 2 systems provide intervention in small-group settings in addition to instruction in the general curriculum.

The screening supported the teachers in identifying children that needed additional support and to create small groups based on developmental levels. All students were taught using instructional methods that were research-based and have been shown to be effective. While screening and progress monitoring are essential components of the assessment process of Rtl, it was the supplemental and intensive instruction that the teachers identified as supporting levels of literacy development for both the case study child and other students who were identified as at risk for reading difficulties.

Although the guided reading program assessed individual students' current instructional reading level that helped to form small groups, the teachers reported that the program did not support them in providing supplemental or intensive instruction as recommended by the IES practice guide. They stated that without this guidance it was difficult to ensure that all the students received the appropriate support to become proficient readers.

In their summary of the research synthesis on the field studies of Rtl programs, Hughes and Dexter (2011) stated;

“we characterize the research base for establishing the impact of various models or approaches to RTI as emerging. As with many educational interventions, more longitudinal research is needed in order for professionals to be confident that Rtl is an effective early intervention approach for all students, as well as confident in its impact on referral and placement rates in special education. In addition to research on the efficacy of RTI, examination of factors necessary for developing and sustaining RTI is also needed to assist educators as they consider adoption of this approach.” (p. 10).

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