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# Using Recognition & Response (R&R) to improve children's language and literacy skills: Findings from two studies



Virginia Buysse\*, Ellen Peisner-Feinberg, Elena Soukakou, Angel Fettig, Jennifer Schaaf, Margaret Burchinal

Frank Porter Graham Child Development Institute, The University of NC at Chapel Hill, Campus Box 8180, Chapel Hill, NC 27599, United States

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#### ABSTRACT

Two studies evaluated Recognition & Response (R&R)—an instructional system consisting of formative assessment, foundational instruction, and targeted small-group lessons designed for use with pre-kindergarteners. Study 1 involved 174 four-year-old children (83 target and 91 comparison) from 24 classrooms in community-based programs, and Study 2 involved 213 four-year-old children (106 target and 107 comparison) from 24 classrooms in one large school district. In both studies, teachers administered a brief, standardized language and literacy assessment to select the four lowest-scoring children within each classroom (Recognition), and then provided small-group lessons to these target children using a curriculum focused on language and literacy skills (Response). Across both studies, the results indicated that target children who received the small-group lessons showed larger gains on some language and literacy skills than a comparison group consisting of classmates who had lower than average scores at baseline and did not receive the small-group lessons. Target children made greater gains than the comparison group in print knowledge in Study 1 and in vocabulary and phonological awareness in Study 2. Both studies found high levels of implementation fidelity and treatment acceptability among the teachers who implemented the intervention.

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#### 1. Introduction

There is growing consensus that early education provides a means to help reduce societal inequities, including reducing the academic achievement gap, decreasing the need for special education, and improving long-term social and economic outcomes into adulthood (Heckman, 2011). Accordingly, a recent emphasis in the early childhood field has been to develop effective assessment and instructional practices to ensure that all young children succeed in school. However, few interventions in pre-k have been designed to target instruction for children with lower skills relative to their peers, particularly those who are not eligible to receive special education services. Recognition & Response (R&R) is an instructional system consisting of formative assessment, foundational instruction, and targeted small-group lessons designed

required additional instructional supports in pre-k.

R&R draws on the available research related to differentiated instruction as an approach to address the needs of an increasingly diverse population of children served in early care and education programs (Buysse & Peisner-Feinberg, 2013a, 2013b). Early child-hood teachers generally are expected to implement foundational instruction to meet the educational needs of all students while also making adjustments for some children who need additional instructional supports, for example, those who are low-performing relative to their peers or those who need special accommodations to learn (NAEYC, 2005; Head Start Performance Standards, 2011). Teachers at all grade levels are now being encouraged to rely more heavily on ongoing assessments to improve instruction and address children's individual learning goals (American Federation of Teachers, 2011), although the extent to which this is happening in practice is largely unknown. A recent review of the

specifically for pre-kindergarten (pre-k) children. The purpose of the current research was to evaluate the R&R model as an approach

for improving the language and literacy skills of children who

<sup>2.</sup> Research on differentiated instruction

<sup>\*</sup> Corresponding author. American Institutes for Research, 100 Europa Drive, Suite 315. Chapel Hill. NC 27517.

E-mail addresses: vbuysse@air.org (V. Buysse), epeisner.feinberg@unc.edu (E. Peisner-Feinberg), elena.soukakou@roehampton.ac.uk (E. Soukakou), angel.fettig@umb.edu (A. Fettig), Jenni.schaaf@unc.edu (J. Schaaf), Burchinal@unc.edu (M. Burchinal).

literature on this topic concluded that there was scant research on early childhood teachers' use of ongoing assessment to differentiate instruction for pre-k children and that the existing research lacks scope and rigor (Akers et al., 2015). Further, this review concluded that teachers who do administer ongoing assessments to young children struggle to make the leap from collecting information to using it to inform instruction. Perhaps even more important, this review found almost no studies focused on whether teachers' use of differentiated instruction resulted in improved outcomes for young children in early education settings.

The implementation and efficacy of differentiated instruction has been studied most frequently in the context of Response to Intervention (RTI) or Multi-Tiered Systems of Supports (MTSS). RTI is a framework for helping K-12 teachers use formative assessment to identify struggling students and then implement targeted small-group instruction in reading or math to address their specific learning goals (Bradley et al., 2011; Burns, Appleton, & Stehouwer, 2005; Gersten et al., 2008, 2009). Collectively, research findings have indicated that RTI is particularly effective when implemented in the early grades, that it can yield positive learning outcomes, and that it reduces the need for special education services. A metaanalysis of 24 studies concluded that students attending schools implementing RTI demonstrated greater growth in academic skills, more time on task, and better task completion, compared to those attending schools not implementing RTI (Burns et al., 2005). An Institute of Education Sciences (IES) report summarizing the empirical evidence on RTI for school-age students showed that universal screening in reading could predict student's future performance, and that progress monitoring had a positive effect on teachers' instructional decision-making (Gersten et al., 2008). The findings also indicated strong evidence for the effectiveness of Tier-2 smallgroup interventions in reading for elementary students who were identified as at-risk for learning difficulties in this area (i.e., scored below the benchmark on universal screening). In contrast, the evidence supporting differentiated reading instruction for all students at Tier 1 (i.e., attempting to address the needs of individual students in the context of whole-group instruction) was limited, lending further support for the use of Tier-2 small-group lessons with students who need additional instructional supports to learn core skills. Similarly, a more recent synthesis of IES-funded research on improving reading instruction concluded that screening and progress monitoring were useful for identifying at-risk students, guiding instructional decision-making, and evaluating learning outcomes (Connor, Alberto, Compton, & O'Connor, 2014). Further, the authors found that increasing the intensity of instruction in kindergarten through third grade was associated with the prevention of later reading disabilities. Given the mounting evidence for the effectiveness of differentiated instruction within an RTI context for school-age students, additional research is needed to evaluate whether a similar approach adapted for pre-k would be effective in enhancing learning for a younger population of children.

## 3. Research on language and literacy instruction in early childhood

R&R also draws on research on language and literacy in early childhood, including the skills that are most predictive of later achievement (e.g., alphabet knowledge, phonological awareness, and vocabulary) and the curricula and instructional approaches that are most effective for teaching these skills in pre-k (National Early Literacy Panel [NELP], 2008; National Research Council [NRC], 2008). The language and literacy interventions that have been evaluated through research for pre-k generally fall into three broad categories: (a) instructional practices, (b) curricula, and (c) multicomponent instructional systems.

#### 3.1. Instructional practices

The National Early Literacy Panel (NELP) conducted metaanalyses of 500 published research articles to determine which instructional practices were efficacious for children birth to 5 years of age (NELP, 2008). The NELP report found that three broad instructional approaches represented in many early childhood curricula had positive effects on children's language and literacy development in pre-k: (1) code-oriented instruction focused on children's phonological awareness and alphabet knowledge; (2) oral language instruction targeting vocabulary and sentence structure; and (3) shared storybook reading emphasizing language development. Further, many of the NELP studies with strong effects on children's language and literacy skills involved small-group instruction. These results suggest that such approaches may be beneficial for enhancing children's language and literacy development when included as part of a comprehensive program.

#### 3.2. Curricula

Based on a review of the What Works Clearinghouse, the major source of empirical evidence on the effectiveness of educational interventions, there is some evidence to suggest that language and literacy curricula implemented at a classroom-wide level can have positive effects for promoting children's oral language, print knowledge, and phonological processing skills in pre-k. In addition, the use of a curriculum to support instruction, including language and literacy, is a recommended practice in early childhood (NAEYC & NAECS/SDE, 2003). Although the use of a language and literacy curriculum may be an important component for improving the quality of classroom instruction in pre-k, it may not be sufficient to address the needs of all children, particularly those who are performing at lower levels relative to their peers and may need additional instructional supports to learn key language and literacy skills.

#### 3.3. Multi-component instructional systems

A third category of interventions designed to improve young children's language and literacy skills in pre-k consists of instructional systems with multiple components including formative assessment, curriculum, and targeted instruction, along with professional development and supports for implementation. Examples of research-based instructional systems designed for pre-kindergarten children include the Head Start REDI program (REsearch-based, Developmentally Informed; Bierman et al., 2008), My Teaching Partner (Downer et al., 2011; Pianta, Mashburn, Downer, Hamre, & Justice, 2008), EPIC (Evidence-based Program for Integrated Curricula; Fantuzzo, Gadsden, & McDermott, 2010), and TEEM (Texas Early Education Model; Landry, Swank, Anthony, & Assel, 2011). All of these interventions have been evaluated through research using RCT designs and have been found to be effective in improving children's language and literacy skills, and in some cases, improving teaching practices (Landry et al., 2011; Pianta et al., 2008). These multi-component interventions include some of the key components of a comprehensive instructional system to support language and literacy learning in pre-k, but none included all of them (formative assessment, curriculum, and targeted instruction, along with professional development and implementation supports) within a single system. Key elements that were missing or not fully defined in a number of these existing systems were the use of teacher-administered assessments to inform instructional decisions, and targeted interventions for children who need more intensive instruction to learn key language and literacy concepts. Although previous research has not yet demonstrated the effectiveness of an instructional system incorporating all of these key components in pre-k, a growing body of research has shown

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