



Effects of automated Tier 2 storybook intervention on vocabulary and comprehension learning in preschool children with limited oral language skills



Elizabeth Spencer Kelley^{a,*}, Howard Goldstein^b, Trina D. Spencer^c, Amber Sherman^d

^a Department of Communication Science and Disorders, University of Missouri – Columbia, 423 Lewis Hall, Columbia, MO 65211, United States

^b College of Behavioral & Community Sciences, University of South Florida, 13301 Bruce B. Downs Blvd., MHC 1121, Tampa, FL 33612-3807, United States

^c Institute for Human Development, Northern Arizona University, PO Box 5630, Flagstaff, AZ 86011, United States

^d Crane Center for Early Childhood, The Ohio State University, 1945 N High Street, Room 353, Columbus, OH 43210, United States

ARTICLE INFO

Article history:

Received 23 January 2014

Received in revised form 3 December 2014

Accepted 29 December 2014

Available online 8 January 2015

Keywords:

Vocabulary

Preschool

Comprehension

Language intervention

Response to intervention

ABSTRACT

This early efficacy study examined the effects of an automated storybook intervention designed to promote school readiness among at-risk prekindergarten children. Story Friends is a small-group intervention in which vocabulary and question-answering lessons are embedded in a series of storybooks. A randomized group design with an embedded single-case experimental design was used to examine treatment effects. Eighteen children from public prekindergarten programs serving families with low income were randomly assigned to the Story Friends treatment or a business-as-usual comparison. Participants in both groups completed measures of vocabulary and comprehension approximately monthly. Participants in the treatment group completed measures of instructional content for each book as part of the embedded single-case experimental design. Story Friends participants had significantly higher scores on measures of vocabulary than the comparison group and effect sizes were large, whereas more modest effects were shown for comprehension measures. Observations of treatment fidelity indicate that this intervention has the potential to be implemented with high fidelity in preschool classrooms. Results show a feasible means of teaching pre-K children challenging vocabulary that has the potential to facilitate later literacy development.

© 2015 Elsevier Inc. All rights reserved.

Introduction

Children enter early childhood programs with diverse early language and literacy experiences. A substantial number of children, including those from families with low socioeconomic status, have limited oral language skills that place them at risk for later reading disabilities. For example, Qi, Kaiser, Milan, and Hancock (2006) reported that a group of preschoolers enrolled in Head Start had a group mean of approximately 1.5 standard deviations below the normative mean on a standardized measure of receptive vocabulary, the Peabody Picture Vocabulary Test – Third Edition (PPVT-III; Dunn & Dunn, 1996). Oral language skills, including vocabulary, in early childhood predict future reading ability (Lonigan, Schatschneider, & Westburg, 2008), placing preschool

children with limited oral language skills at high risk of reading disabilities in later school years.

Response to intervention

Multi-tiered instruction, a key component of response to intervention (RtI) models, is a promising approach for preventing reading disabilities. RtI models have been implemented widely in the elementary years (Berkeley, Bender, Gregg Peaster, & Saunders, 2009) and are an emerging practice in early childhood settings (Greenwood et al., 2011; VanDerHeyden, Snyder, Broussard, & Ramsdell, 2008). Children who receive prompt instruction to remediate academic deficits within a multi-tier framework may experience improved academic outcomes. Specifically, effective tiered oral language and literacy instruction in early childhood may improve skills of young children and, thus, prevent future reading disabilities.

In an RtI model, different tiers of instruction, often three, are provided to children based on individual needs (Gersten et al., 2008).

* Corresponding author. Tel.: +1 573 882 2981.

E-mail addresses: kelleyes@health.missouri.edu (E.S. Kelley), hgoldstein@usf.edu (H. Goldstein), trina.Spencer@nau.edu (T.D. Spencer), Sherman.156@osu.edu (A. Sherman).

In Tier 1, a high-quality general education curriculum is provided to all children. Information from screening or progress monitoring measures is used to identify children who are not making adequate progress in Tier 1 and who may benefit from supplemental instruction in a Tier-2 arrangement. Children who fall well behind peers, and for whom Tier 2 is not sufficient, may receive intensive, individualized instruction in Tier 3. Tiers 2 and 3 can be differentiated from Tier 1 by the frequency and duration of instruction, the instructional approach (e.g., systematic, explicit), and the delivery arrangement (e.g., small group or individual; Fuchs & Fuchs, 2006). Most often, high quality Tier-2 programming is characterized by systematic, supplemental, targeted instruction administered in small groups.

Effective implementation of RtI models in early childhood settings necessitates empirically supported options at all three tiers. However, researchers have reported a concern about the general effectiveness and quality of Tier-1 instruction in early childhood settings (Greenwood et al., 2012; Justice, Mashburn, Hamre, & Pianta, 2008; Justice, Mashburn, Pence, & Wiggins, 2008), which creates an important challenge to the effectiveness of RtI models. Hence, investigators have sought to improve Tier-1 instruction in early childhood settings (Diamond & Powell, 2011; Dickinson & Caswell, 2007; Justice, Mashburn, Hamre, et al., 2008; Justice, Mashburn, Pence, et al., 2008). However, there also is a need for high-quality Tier-2 and Tier-3 interventions for young children with learning needs.

For children with limited oral language skills, supplemental intervention may help prevent academic problems. Prior vocabulary knowledge is a predictor of success in vocabulary intervention studies, as children who begin intervention with low vocabulary are less likely than peers with higher vocabulary to learn words (Coyne, McCoach, Loftus, Zipoli, & Kapp, 2009; Coyne, Simmons, Kame'enui, & Stoolmiller, 2004; Penno, Wilkinson, & Moore, 2002). Few studies have examined tiered approaches for improving the oral language of young children with limited oral language skills (Loftus, Coyne, McCoach, & Zipoli, 2010; Pullen, Tuckwiller, Konold, Maynard, & Coyne, 2010; Zucker, Solari, Landry, & Swank, 2013). Loftus et al. (2010) delivered a tiered vocabulary intervention to kindergartners identified as at-risk because of low vocabulary scores (standard scores between 40 and 91 on the PPVT-III; Dunn & Dunn, 1996). Participants learned more about those words if they received both a first tier of classroom-based instruction and a second tier of supplemental instruction than if received only the first tier of instruction. Using a similar approach with a between-subjects design, Pullen et al. (2010) reported that at-risk children who received a second tier of vocabulary instruction made gains in vocabulary, whereas at-risk peers who received only the first tier did not.

Characteristics of effective oral language interventions

Several recent meta-analyses and research syntheses have reported moderate-to-large effects of various interventions on oral language skills of young children. Those interventions included shared book reading, language enhancement, and vocabulary interventions (Elleman, Lindo, Morphy, & Compton, 2009; Fischel & Landry, 2008; Lonigan, Shanahan, & Cunningham, 2009; Marulis & Neuman, 2010; Mol, Bus, & de Jong, 2009; Mol, Bus, de Jong, & Smeets, 2008). Within this evidence of positive intervention effects, there is substantial variability in the magnitude of effects. For example, in the 67 vocabulary intervention studies included in Marulis and Neuman (2010) review, effect sizes ranged from -0.10 to $+2.13$. To substantially improve outcomes for children with limited oral language skills as part of tiered models of instruction, it is important that interventions produce strong effects.

Based on RtI research with school-age students, several features of effective supplemental interventions have been suggested.

Gersten et al. (2008) recommend that Tier-2 intervention should be implemented in small groups, target critical reading-related skills, and include explicit instruction with multiple opportunities for student practice. Foorman and Torgesen (2001) asserted that effective instruction for children at-risk of reading failure should be explicit, intensive, and supportive (e.g., include scaffolding to help children acquire new skills).

When studies of oral language intervention are examined, the same characteristics of effective interventions emerge. Marulis and Neuman (2010) concluded that only vocabulary interventions using explicit teaching strategies produce large effects. Children learn more words and more about those words when provided explicit instruction compared to when children are simply exposed to words (Brett, Rothlein, & Hurley, 1996; Coyne, McCoach, & Kapp, 2007; Elley, 1989; Justice, Meier, & Walpole, 2005; Penno et al., 2002; Robbins & Ehri, 1994; Sénéchal, 1997).

Effective instruction is intensive and interactive. Interventions in which children receive repeated exposure to vocabulary instruction is more effective than limited exposure (Beck & McKeown, 2007; Coyne et al., 2007). Oral language skill instruction has been shown to be more effective when it is interactive (Mol et al., 2008; Whitehurst et al., 1994). Components of interactive instruction include opportunities for active responding by children (Greene-Brabham & Lynch-Brown, 2002; Sénéchal, Thomas, & Monker, 1995), modeled feedback (van Kleeck, van der Woude, & Hammett, 2006) and including open-ended questions (Wasik & Bond, 2001).

These characteristics are evident in the model of robust vocabulary instruction advanced by Beck & McKeown (2007) and Beck, McKeown, and Kucan (2013). Robust vocabulary instruction includes recommendations for the types of words most appropriate for explicit, intensive instruction as well as recommendations for the instructional approach. Recommended target vocabulary words are 'Tier-2' words that are sophisticated, high-utility words (*required, maintain*; Beck et al., 2013). Instruction is designed to develop deep understanding of these words. Words are presented with explicit instruction that includes child-friendly definitions and multiple examples and contexts to provide information about word meanings. The positive effects of this type of extended, explicit instruction on the vocabulary knowledge of young children have been well documented (Coyne et al., 2009; Justice et al., 2005; Penno et al., 2002; Pollard-Durodola et al., 2011). Participants in these studies demonstrated learning of target vocabulary but rarely demonstrated improvements on generalized measures of oral language (Coyne et al., 2010).

Several research groups have examined inferential language as a contributor to comprehension. Inferencing ability predicts later listening comprehension (Kendeou, Bohn-Gettler, White, & Van Den Broek, 2008; Lepola, Lynch, Laakkonen, Silvén, & Niemi, 2012) and studies of inferential question use by teachers and parents indicate that these types of questions may result in children's use and understanding of more sophisticated, abstract language (Tompkins, Zucker, Justice, & Binici, 2013; van Kleeck, Gillam, Hamilton, & Cassandra, 1997; Zucker, Justice, Piasta, & Kaderavek, 2010). Few studies have examined interventions to teach such comprehension skills to young children. van Kleeck et al. (2006) examined the effects of a scripted storybook intervention that targeted inferential as well as literal questions. Inferential questions are related to information that is not directly stated in the text or illustrations of the story (e.g., predictions, questions about character emotions). Preschool children with language impairments demonstrated larger gains in literal and inferential language skills relative to a comparison group. Desmarais, Nadeau, Trudeau, Filiatrault-Veilleux, & Maxès-Fournier (2013) reported positive effects of a similar intervention, although the lack of a control group compromises the interpretation of their findings.

Download English Version:

<https://daneshyari.com/en/article/353696>

Download Persian Version:

<https://daneshyari.com/article/353696>

[Daneshyari.com](https://daneshyari.com)