



Shared Interactive Reading for Young Children with Disabilities: A Review of Literature with Implications for Future Research

Engelli Çocuklar için Ortak Etkileşimli Okuma: Gelecek çalışmalar için Etkileri ile Bir Alanyazın Taraması

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Abstract

Shared interactive reading, or shared book reading, is a commonly used practice that has a strong research base for children who are typically developing, those at risk, and for children with disabilities. It has been used to target both language and preliteracy skills in preschool children with and without disabilities, generally effecting positive change in the specific skills targeted. This article gives an overview of the research literature regarding shared interactive reading as an intervention for young children with and without disabilities. Implications for using shared interactive reading as a strategy for young children with disabilities are included.

Keywords: Shared interactive reading, shared book reading, preschool, children with disabilities.

Öz

Ortak etkileşimli okuma ve ya ortak kitap okuma, geliştirmekte olan, risk altında olan ve de engelli çocuklar için güçlü bir araştırma dayanağı olan sıklıkla kullanılan bir uygulamadır. Engelli olan ve olmayan okul öncesi çocukların dil ve yazı öncesi becerilerine hitap etmek amacıyla kullanılmaktadır ve genellikle olumlu etkileri bulunmaktadır. Bu makalede, engelli olan ve olmayan çocuklar için uygulanan ortak etkileşimli okuma ile ilgili alanyazın taraması yapılmıştır. Engelli olan ve engelli olmayan çocuklar için ortak etkileşimli okuma kullanımı ile ilgili çıkarımlar yapılmıştır.

Anahtar Kelimeler: Ortak etkileşimli okuma, ortak kitap okuma, okul öncesi eğitim, engelli çocuklar.

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1. Introduction

Preschool children with disabilities are at an increased risk for deficits in their overall communication skills, leading to potential insufficiencies in their preliteracy and later reading and writing skills (Marvin, 1994; NICHD, 2005). According to the National Institute on Deafness and Other Communication Disorders (NIDCD), approximately 8% of children in the U.S. over the age of three years have a speech or language impairment (Black,

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Vahratian, & Hoffman, 2015). Such impairment typically involves significant deficits in oral language skills, specifically receptive (i.e., ability to understand) and expressive (i.e., ability to express) vocabulary skills (Shevell et al., 2003). It is well documented that providing early communication and language interventions to young children with disabilities is effective, particularly when the interventions occur early in life, have a strong empirical base, and take place in natural and inclusive settings (Hemmeter & Kaiser, 1994; Odom & Wolery, 2003; Warren & Yoder, 1996). Since communication skills in general, and engagement with print and language specifically, are critical for children with disabilities, it is important to provide interventions to teachers and parents that are both effective and occur naturally within the daily routine (Carlson, Bitterman, & Jenkins, 2012; Koppenhaver, Hendrix, & Williams, 2007; Marvin, 1994; Warren & Yoder, 1996).

One such intervention is that of shared interactive book reading. Interventions that center around shared interactive book reading have been found to positively affect the communication and language skills in children with both typical development and those with disabilities (Mol, Bus, & de Jong, 2009; WWC, 2015). Shared interactive reading, or shared book reading, is a commonly used practice in which adults intentionally use one or more interactive practices to engage children in the text, targeting specific language and preliteracy skills. Shared interactive reading interventions focus on engaging the child using strategies such as child-centeredness, elaborations of children's utterances, active responding, pause time, and evaluation of children's responses (Hemmeter & Kaiser, 1994). They have been used to target both language and preliteracy skills in preschool children with and without disabilities, generally affecting positive change in the specific skills targeted (e.g., Bus, Van Ijzendoorn, & Pellegrini, 1995; Colmar, 2011; Colmar, 2014; Ezell et al., 2000; Mol et al., 2009; WWC, 2015). Shared interactive reading interventions produce statistically significant and moderate-sized effects on children's oral language skills and print knowledge and account for unique variance in their expressive vocabulary and morphological skills (Bus, et al., 1995; Justice et al., 2015; Lonigan & Shanahan, 2009; Mol et al., 2009; Senechal et al., 2008). Shared interactive reading can be a good context for explicit instruction in vocabulary development, and language and preliteracy skills in general as it provides children with a context in order to scaffold new language skills (Bus et al., 1995; Dickinson, De Temple, Hirschler, & Smith, 1992; Gonzalez et al., 2014; Justice, Logan, Kaderavek, & Dynia, 2015; Justice & Pullen, 2003; Lonigan & Shanahan, 2009; Marulis & Neuman, 2010; Reese, Sparks, & Leyva, 2010; Roskos & Burstein, 2011; Lonigan, Roskos et al., 2008; Scarborough & Dobrich, 1994; Senechal, Pagan, Lever, & Ouellette 2008; Walsh & Blewitt, 2006).

This article describes the current relevant research around shared interactive reading. The literature search was completed using three strategies to locate potential studies for inclusion. First, a computer-based search was completed using EBSCO, Galileo, Google Scholar, and ERIC from 1980 to 2015. All journals representative of English speakers, both U.S. and international, were included. The following keywords were used in the searches: *shared interactive reading, shared interactive book reading, shared reading, preschool, young children, language, literacy, emergent literacy, preliteracy, disabilities, language impairment*. From the initial search results, only articles specifically referencing shared interactive book reading were included. Next, the reference lists of each study that met the criteria were reviewed to assist in locating additional relevant studies. Finally, in Google Scholar, the "related articles" feature was used to obtain any relevant literature for the search. Doctoral dissertations were excluded from the review. It should be noted that research specific to dialogic reading, a particular type of shared interactive reading, is not included in this article as it is described in a separate companion article. While dialogic reading has a strong research and practical foundation in increasing the expressive vocabulary and oral language skills for children who are typically developing and those who are considered at-risk (Lonigan & Whitehurst, 1998; Mol et al., 2009; Whitehurst et al., 1988; Whitehurst, Arnold et al., 1994; Whitehurst, Epstein et al., 1994; Whitehurst et al., 1999; Zevenbergen, Whitehurst, & Zevenbergen, 2003), limited evidence exists for the use of dialogic reading for children with disabilities (Crain-Thorenson & Dale, 1999; Dale, Crain-Thorenson, Notari-Syverson, & Cole, 1996; Fleury, Miramontez, Hudson, & Schwartz, 2013; Hargrave & Senechal, 2000; Katims, 1994).

As shared book reading is a common activity between adults (e.g., parents, caregivers, teachers) and young children, this article will first describe typical interactions between dyads when no explicit instruction is provided. Next, specific intervention studies using shared interactive reading for children who are typically developing or at-risk are presented, with explicit information on the strategies and skills targeted, the duration and frequency of interventions, setting, training, and outcomes assessed. Studies that have implemented shared interactive reading for young children with disabilities will then be reviewed. Special attention will be paid to how researchers define disability and language impairment, as well as the strategies and skills targeted, the duration and frequency of interventions, setting, training, and outcomes assessed.

Typical Interactions during Book Reading Between Adults and Young Children with and without Disabilities

In order to determine the need for explicit strategy use during shared book reading, researchers have attempted to observe and describe the typical interactions between adults and children with and without disabilities during book reading when no explicit training is provided. Without specific training, adults tend to question children about information related directly to pictures more than concepts of print or information related to the storyline (Ezell & Justice, 1998; Rabidoux & MacDonald, 2000). During these interactions, adults act more as ‘managers’ and ‘directors’ while the children take a more passive role in the book reading experience, creating decreased opportunities for the children to verbally engage or initiate communication in the activity (Ezell & Justice, 1998; McGinty, Justice, Zucker, Gosse, & Skibbe, 2012; Pellegrini et al., 1995; Pellegrini, McGillicuddy-DeLisi, Sigel, & Brody, 1986; Rabidoux & MacDonald, 2000). The text type in which adults (i.e., parents) engage their children in reading results in different types of language interactions (Pellegrini et al., 1995; Pellegrini, Perlmutter, Galda, & Brody, 1990). Narrative texts (e.g., *The Little Red Hen*) created less parent-child interaction than expository texts (e.g., *My First Book of Words*) where parents were more inclined to question children about vocabulary (Pellegrini et al., 1990).

Adults interacting with children with disabilities are often ineffective in their use of questioning and in ways of sharing their knowledge with children during shared book reading and may require specific training in effective strategies (Ezell & Justice, 1998; McGinty et al., 2012; Rabidoux & MacDonald, 2000). However, parents of children with disabilities were observed to adjust their interactions during book reading to a less demanding and more supportive strategy than parents of children without disabilities, suggesting they attempt to support their children within their zone of proximal development (Pellegrini et al., 1986; Vygotsky, 1978). Shared book reading provides an opportunity for a shared context, promoting topic control that may assist children with disabilities in scaffolding language skills from the reader (Justice & Kaderavek, 2003; Justice & Pullen, 2003). Engaging children in shared interactive reading which encourages child participation is directly related to gains in their language and preliteracy skills (Gonzalez et al., 2014; Pellegrini et al., 1995). Specifically, the length of time adults’ engaged children in questioning is related to increased receptive vocabulary skills, while frequency and duration of questioning is related to increased expressive vocabulary skills (Gonzalez et al., 2014). Therefore, it is valuable to consider using these shared interactive reading experiences to promote the language skills of young children with significant disabilities.

Shared Interactive Reading for Young Children who are Typically Developing or At-Risk

There exists a strong literature base around shared storybook reading for young children who are typically developing or considered at-risk for language and preliteracy skill development. Generally, interventions that include shared interactive reading have targeted a wide range of language and preliteracy skills and tend to positively affect the skills they seek to change. There is also variety in the duration of interventions, settings in which these interventions occur, as well as how adults are trained and what skills were affected as a result of the intervention.

Strategies and Skills Targeted

Reviews of shared interactive reading with preschool children that are typically developing have discovered a focus on immediate information (e.g., labeling pictures) for three-year-olds and extension of communication, recall, and analysis more common in reading to four-year-olds (Dickinson et al., 1992). Although suggestions on the optimal way to share storybooks with preschool children vary, a preference for reading in small groups, reading with expression, encouraging interaction, relating books to the children’s lives, discussing language and word meanings, listening to the children’s comments and repeating them and expanding them, and repeated reads are common recommendations (Dickinson et al., 1992; Justice, Meier, & Walpole, 2005; Justice & Pullen, 2003; Marulis & Neuman, 2010; Pellegrini, Galda, Jones, & Perlmutter, 1995; Roskos et al., 2008; Trivette, Simkus, Dunst, & Hamby, 2012).

Extra-textual talk (e.g., information the reader provides that goes beyond the words in the book) prior to, during, and after book reads is significantly related to improvement in children’s language and preliteracy skills (Gonzalez et

al., 2014). While studies vary in their focus on either language or preliteracy skills, the majority of teachers and parents naturally focus their book related talk on questions regarding meaning (e.g., vocabulary) over code-related information (Hindman, Connor, Jewkes, & Morrison, 2008). The majority of interventions in shared book reading were implemented using a questioning strategy and centered on promotion of oral language skills, specifically expressive vocabulary (Brannon, Daukas, Coleman, Israelson, & Williams, 2013; Senechal & Cornell, 1993; Trivette et al., 2012; Wasik & Bond, 2001; Wasik, Bond, & Hindman, 2006). However, strategies such as specific commenting have been implemented and found to increase children's initiations and comments, potentially to a greater degree than questioning (Hockenberger, Goldstein, & Haas, 1999). Other studies have targeted specific vocabulary words through repeated reads and found that children are more likely to learn these targeted words than if the books were read without intentional strategies focused on the targeted words (Justice, Meier et al., 2005; Penno, Wilkinson, & Moore, 2002; Pollard-Durodola et al., 2011; Wasik & Bond, 2001; Wasik et al., 2006). Specifically, providing the meaning of novel words in a contextualized setting and encouraging the use of those words in new contexts facilitates vocabulary growth and generalization of newly learned words (Justice, Kaderavek, Bowles, & Grimm, 2005; Justice & Pullen, 2003). Questioning children upon the specific vocabulary words has been considered to promote vocabulary growth, which is true for both eliciting questions (i.e., when children are required to recall and use specific vocabulary) and non-eliciting questions (Gonzalez et al., 2014; Walsh & Blewitt, 2006).

Shared interactive reading also promotes teachers' use of inferential over literal questions (Zucker, Justice, Piasta, & Kaderavek, 2010). Similarly, when researchers targeted increased references to story plot (i.e., vocabulary, sequence of events, story structure) and socio-cognitive themes (i.e., mental causality, mental terms, references to child's life), parents were able to change their reading behaviors resulting in eliciting rich dialogue between parents and children around a shared storybook (Aram, Fine, & Ziv, 2013). Retellings of stories by children, adults' use of manipulatives or concrete objects, and positive reinforcement of children's comments are other effective strategies used to promote vocabulary growth (Leung, 2008; Trivette et al., 2012; Wasik & Bond, 2001).

Shared interactive reading interventions have also focused on preliteracy skills, such as skills related to print concepts, phonological awareness, and alphabet knowledge (Justice & Ezell, 2002; Justice & Pullen, 2003). Justice & Ezell (2002) found that children who participated in print focused reading sessions performed better in terms of the measurement of print awareness than children who received regular reads (e.g., with a focus on pictures). However, the evidence of increasing these skills is less prominent, with smaller effect sizes noted on alphabet knowledge and general reading achievement (WWC, 2015).

Differential effects have also been noted based on what the child brings to the reading experience as well as the types of prompts used (Senechal, 1997; Hay & Fielding-Barnsley, 2007; Hindman et al., 2008). Specifically, questions may promote more positive effects on expressive vocabulary, while repeated readings may work to improve both receptive and expressive vocabulary simultaneously (Senechal, 1997; Senechal & Cornell, 1993). However, frequency and duration of vocabulary related questions were linked to improved expressive vocabulary (Gonzalez et al., 2014). Verbal cues in shared interactive reading have also been supplemented by concrete objects and manipulative as well as by repeated reads and pause time to further affect change on children's oral language skills and engagement with books (Aram et al., 2013; Justice & Pullen, 2003; Trivette et al., 2012; Wasik & Bond, 2001; Wasik et al., 2006). Whether teachers provide questions prior to, during or after the book reading experience also brings differential effects (Gonzalez et al., 2014). Specifically, time spent discussing the book after a book read is significantly linked to expressive language skills, while the quantity of questions was related to receptive vocabulary skills (Gonzalez et al., 2014).

Duration and Frequency

Interventions of shared interactive reading appear to vary significantly in duration and frequency of book reads; unfortunately, this information was not consistently reported. Researchers have evaluated repeated book reads over as few as two days (Senechal, 1997) to as long as one school year (i.e., nine months) (Wasik et al., 2006). On average, most interventions were eight to twelve weeks in duration, with a range of three to five book readings per week (Aram et al., 2013; Brannon et al., 2013; Justice & Ezell, 2002; Pollard-Durodola et al., 2011). Single readings of a storybook between an adult and child may not be sufficient for vocabulary acquisition (Senechal & Cornell, 1993). However, duration or frequency of interventions did not appear to be a significant factor that influenced effect sizes, with some interventions of short duration causing significant changes in children's skills (Bus et al., 1995; Marulis & Neuman, 2010).

Setting

The strategies implemented around shared storybook reading are frequently evaluated in home settings with parent-child dyads (Aram et al., 2013; Brannon et al., 2013; Hockenberger et al., 1999; Pellegrini et al., 1995). Other studies have taken place in the preschool classroom, implemented either by researchers or by training classroom teachers in appropriate strategies (Gonzalez et al., 2014; Justice & Ezell, 2002; Justice, Meier et al., 2005; Leung, 2008; Milburn, Girolametto, Weitzman, & Greenberg, 2014; Penno et al., 2002; Pollard-Durodola et al., 2011; Wasik & Bond, 2001; Wasik et al., 2006).

Training

Training parents and teachers to implement strategies of shared interactive reading with fidelity is crucial for positive outcomes. Many studies in shared interactive reading were observational in nature (Gonzalez et al., 2014; Hindman et al., 2008; Zucker et al., 2010) or researcher implemented (Justice & Ezell, 2002; Justice, Meier et al., 2005; Senechal, 1997; Senechal & Cornell, 1993; Senechal et al., 2008; Senechal, Thomas, & Monker, 1995), while others were implemented by parents (Aram et al., 2013; Brannon et al., 2013; Hockenberger et al., 1999). Training for parents included workshops and videos (Aram et al., 2013; Brannon et al., 2013; Hockenberger et al., 1999). Providing teachers with training through professional development (Penno et al., 2002; Pollard-Durodola et al., 2011; Wasik & Bond, 2001), or professional development combined with individual coaching sessions, resulted in significantly higher rates of strategy use and longer book-related conversations (Milburn et al., 2014; Wasik et al., 2006).

Outcomes Assessed

Shared interactive reading is generally found to result in positive effects for the skills targeted. However, due to the lack of sensitivity of standardized assessments for the relatively short intervention periods, the exclusive or supplemental use of more sensitive curriculum based or researcher developed measures is often warranted (Brannon et al., 2013; Justice & Ezell, 2002; Justice, Meier et al., 2005; Leung, 2008; Milburn et al., 2014; Penno et al., 2002; Pollard-Durodola et al., 2011; Senechal, 1997; Senechal & Cornell, 1993; Senechal et al., 2008; Senechal et al., 1995; Wasik & Bond, 2001; Wasik et al., 2006). Similar to other features of shared interactive reading, outcome variables for children and adults are also inconsistent across studies. Researchers have reported positive child outcomes for such skills as extended dialogue, time engaged in reading, expressive language and vocabulary skills, receptive vocabulary skills, scientific vocabulary, and preliteracy skills (e.g., words in print, print recognition, alphabet knowledge), (Aram et al., 2013; Brannon et al., 2013; Gonzalez et al., 2014; Hockenberger et al., 1999; Justice & Ezell, 2002; Justice, Meier et al., 2005; Leung, 2008; Milburn et al., 2014; Penno et al., 2002; Pollard-Durodola et al., 2011; Senechal, 1997; Senechal & Cornell, 1993; Senechal et al., 2008; Senechal et al., 1995; Trivette et al., 2012; Wasik & Bond, 2001; Wasik et al., 2006). Although gains in both receptive and expressive vocabulary are noted with these interventions, greater gains in expressive vocabulary are more common (Roskos & Burstein, 2011; Roskos et al., 2008).

When assessing outcomes in adults, researchers have found that adults trained or participating in shared interactive reading have demonstrated growth in reference to book plot, reference to socio-cognitive aspects of the book, specific commenting, open-ended questions, responsive statements and feedback, variability in words, explicit explanations of target vocabulary, and use of concrete objects to reinforce vocabulary words (Aram et al., 2013; Hockenberger et al., 1999; Milburn et al., 2014; Penno et al., 2002; Pollard-Durodola et al., 2011; Wasik & Bond, 2001; Wasik et al., 2006).

Summary

In summary, shared interactive reading is a broad term that describes an adult (e.g., parent, caregiver, teacher) and child engaging in verbal interaction around a shared storybook. Earlier studies by Senechal and colleagues investigated shared interactive reading as an intervention to positively affect children's acquisition of novel receptive and expressive vocabulary through researcher-child shared reading sessions with positive effects (Senechal, 1997; Senechal et al., 1995). This area of research has expanded to show that shared reading between parents and their children accounts for a unique portion of variance in children's expressive vocabulary and

morphological knowledge (Senechal et al., 2008). Also working with parent-child dyads, researchers have found that training parents in strategies such as specific commenting can also facilitate children's language and preliteracy skills (Hockenberger et al., 1999), increase parents' referencing to a book's overall plot (Aram et al., 2013), and increase time spent on reading while facilitating expressive language skills (Brannon et al., 2013).

Shared interactive reading studies have also shown benefits for children in preschool classrooms. Teacher engagement of their students around shared interactive reading promotes active participation, relating to meaningful gains in the children's language and preliteracy skills (Gonzalez et al., 2014). Specifically, shared interactive reading in classroom promotes novel word learning in elaborated words (Justice, Meier et al., 2005; Penno et al., 2002; Pollard-Durodola et al., 2011; Trivette et al., 2012; Wasik & Bond, 2001; Wasik et al., 2006), print awareness (Justice & Ezell, 2002), and scientific vocabulary (Leung, 2008). Further, teachers can be trained in using strategies effectively to target a variety of language and preliteracy skills through shared interactive reading (Milburn et al., 2014; Pollard-Durodola et al., 2011; Wasik & Bond, 2001; Wasik et al., 2006; Zucker et al., 2010).

Shared Interactive Reading for Young Children with Disabilities

Research in using shared interactive reading for young children with a variety of disabilities is also well established. The most common population targeted is children with mild-moderate language impairments (Colmar, 2011; Colmar, 2014; Ezell et al., 2000; Justice, Kaderavek, et al., 2005; McGinty et al., 2012; Pile, Girolametto, Johnson, Chen, & Cleave, 2010; van Kleeck, Woude, & Hammett, 2006; Voelmle & Storkel, 2015); however, researchers have expanded work for children with more severe disabilities in early elementary school (Browder, Mims, Spooner, Ahlgrim-Delzell, & Lee, 2008; Hudson & Test, 2011; Koppenhaver, Erickson, & Skotko, 2001; Mims, Browder, Baker, Lee, & Spooner, 2009). Similar to the research in shared interactive reading for children who are at-risk or typically developing, there is much variability in the literature regarding skills targeted, duration and frequency of intervention, settings, types of training provided, and outcomes for children with disabilities. An additional factor is how researchers define their population.

Defining Language Impairment or Disability Status

There is wide variability in how researchers describe participants as well as qualify their language impairment or disability status, which may affect interpretation of the outcomes of shared interactive reading since children who range from non-verbal to speaking in phrases are quite different in language ability. Researchers using the term "language impairment", "communication disorder" or "language difficulties" are most often referring to the clinical term "specific language impairment". According to the American Speech-Language Hearing Association (ASHA); (Ervin, 2001), a specific language impairment is, "characterized by difficulty with language that is not caused by known neurological, sensory, intellectual, or emotional deficit." In other words, it is an impairment in language in the absence of other disabilities. With the new revisions in the Diagnostic and Statistical Manual of Mental Disorders (5th ed.; DSM-5, American Psychiatric Association, 2013), ASHA recommended the omission of the specifier of specific language impairment as a disability status in language disorder due to the required information regarding non-verbal intelligence, which is often difficult to establish and variable among populations.

However, qualifications of language disorder for research studies have varied, including participants receiving speech-language therapy services (Ezell et al., 2000), those with language scores one and a half to two standard deviations below the mean on standardized assessments of total language ability (Colmar, 2011; Colmar 2014; van Kleeck et al., 2006; Ziolkowski & Goldstein, 2008), and language scores one standard deviation below the mean on total language ability (Justice, Kaderavek et al., 2005; Pile et al., 2010). Other studies included participants with disabilities beyond communication including high functioning autism (Bellon, Ogletree, & Harn, 2000), multiple disabilities (e.g., cerebral palsy, hydrocephalus, visual impairment) (Browder et al., 2008; Mims et al., 2009), Rett syndrome (Koppenhaver et al., 2001), and mild intellectual disabilities (Yoder, Spruytenburg, Edwards, & Davies, 1995).

Strategies and Skills Targeted

Researchers have combined strategies of milieu teaching with shared interactive book reading, incorporating techniques such as prompting, expansions, pause time, repeated reads, and open-ended questions about pictures and have found positive effects on preschool children with disabilities' mean length of utterance (MLU) and their

expressive vocabulary skills (Colmar, 2011; Colmar 2014; Yoder et al., 1995). These results are heightened when combining milieu strategies around both shared interactive book reading and everyday conversations in the home setting (Colmar, 2011; Colmar 2014). Similar to the strategies of milieu teaching, shared interactive reading has been combined with training adults in scaffolding skills (i.e., completion prompts, choice making, wh-questions, and expansions) and using manipulatives for preschool children with high functioning autism (Bellon et al., 2000). When specifically targeted, inferential and literal language skills have also been successfully improved through shared interactive reading in a 1:1 interaction between adults and children with language impairments (van Kleeck et al., 2006). Teaching children with SLI specifically targeted words has recently been explored using shared interactive reading, with positive effects noted following 36 exposures to these novel words (Voelmle & Storkel, 2015).

In addition to targeting language skills in children with disabilities, shared interactive reading has been used to affect change on preliteracy skills, such as alphabet knowledge, phonological awareness (i.e., rhyme, alliteration, initial sound identification), concepts of print, and early writing skills (Ezell et al., 2000; Justice, Kaderavek et al., 2005; Justice et al., 2015; Pile et al., 2010; Ziolkowski & Goldstein, 2008). Additional strategies around shared book reading include extension activities in preschool classrooms such as use of manipulatives or objects related to the book, acting out the book, or using technology to enhance interaction with the book for children with disabilities (Bellon et al., 2000; Johnston, McDonnell, & Hawken, 2008; Kaderavek & Justice, 2002).

When using shared interactive reading for children with multiple or more severe disabilities (e.g., significant intellectual disability, cerebral palsy, spina bifida, seizure disorder, visual impairment), researchers have extended work from children in preschool to early elementary school (Hudson & Test, 2011). These studies have included the use of least to most prompting and alternative and assistive communication technology (AAC) such as single switches, voice output devices, and picture symbols (Browder et al., 2008; Hudson & Test, 2011; Koppenhaver et al., 2001; Mims et al., 2009). Researchers have also adapted books to provide greater accessibility for children with multiple disabilities using shortened length, laminated pages, character name adaption (i.e., substituted students' names), Velcro, and concrete objects (Browder et al., 2008; Hudson & Test, 2011; Mims et al., 2009).

Pause time. Within the many strategies used to implement shared interactive reading for children with disabilities, the use of pause or wait time is frequently referenced (Bellon et al., 2000; Browder et al., 2008; Colmar, 2011; Colmar, 2014; Ezell et al., 2000; Justice, Kaderavek et al., 2005; Koppenhaver et al., 2001; Mims et al., 2009; Pile et al., 2010; van Kleeck et al., 2006; Yoder et al., 1995; Ziolkowski & Goldstein, 2008). Pause time may be referred to as a “cloze procedure” in which the adult pauses to indicate the child should provide a response (Bellon et al., 2000). In other studies, while the specific term “pause time” was not used, the incorporation of a prompt delay for two or more seconds was implemented (Browder et al., 2008; Ziolkowski & Goldstein, 2008). In many studies, researchers explicitly incorporate pause or wait time in shared interactive book reading, both to allow children the opportunity to initiate communication around the book reading, and to respond to questions posed by the adult (Colmar, 2011; Colmar, 2014; Ezell et al., 2000; Justice, Kaderavek et al., 2005; Koppenhaver et al., 2001; Mims et al., 2009; Pile et al., 2010; van Kleeck et al., 2006; Yoder et al., 1995). When identified, the pause or wait time specified ranges from two to five seconds to thirty seconds. Pausing allowed for changes in child behavior such as increasing child initiations and utterances, reduction in adult utterances, and increased turn-taking exchanges (Colmar, 2011; Colmar 2014). The use of pause time, in conjunction with questioning techniques (e.g., wh-questions, open ended questions) has resulted in positive effects for children’s oral language skills (Bellon et al., 2000; Colmar, 2011; Colmar, 2014).

Duration and Frequency

Similar to the variability observed in shared interactive reading for children who are typically developing or at-risk, duration of interventions using shared interactive reading for children with disabilities ranged from as little as 4 weeks to as long as 4 months, with others falling somewhere in between (i.e., 5 weeks, 7 weeks, 8 weeks, 9 weeks, 10 weeks, 13 weeks) (Bellon et al., 2000; Colmar, 2011; Colmar, 2014; Ezell et al., 2000; Justice, Kaderavek et al., 2005; Pile et al., 2010; van Kleeck et al., 2006; Yoder et al., 1995; Ziolkowski & Goldstein, 2008). Justice and colleagues (2015) completed their print-focused shared interactive reading intervention for one school year. There also exists variability in the frequency of shared book reading within these interventions, ranging from daily book reads to twice weekly (Bellon et al., 2000; Colmar, 2011; Colmar, 2014; Ezell et al., 2000; Justice, Kaderavek et al., 2005; Pile et al., 2010; van Kleeck et al., 2006; Yoder et al., 1995; Ziolkowski & Goldstein, 2008). Voelmle and

Storkel (2015) have worked to specifically evaluate the necessary frequency of exposure to novel words for children with SLI, and found that 36 exposures appear to be optimal for word learning and retention.

Setting

Interventions in shared interactive reading between parents and their children with disabilities took place in the home setting (Colmar, 2011; Colmar, 2014; Justice, Kaderavek et al., 2005; Koppenhaver et al., 2001; Pile et al., 2010). When these interventions were implemented in schools, some were in inclusive settings (Justice et al., 2015; van Kleeck et al., 2006; Ziolkowski & Goldstein, 2008), while others took place in self-contained preschool or elementary classrooms (Browder et al., 2008; Mims et al., 2009). Researchers also reported interventions taking place in the clinic setting (Bellon et al., 2000; Ezell et al., 2000; Yoder et al., 1995).

Training

Shared interactive reading interventions for children with disabilities were more often implemented by researchers, particularly when the book reading took place in the classroom or clinic setting (Bellon et al., 2000; Browder et al., 2008; Mims et al., 2009; van Kleeck et al., 2006; Voelmle & Storkel, 2015; Yoder et al., 1995; Ziolkowski & Goldstein, 2008). When researchers trained parents to implement the targeted strategies in the home, instruction was provided in person, via written materials, and/or video (manufactured or researcher developed), (Colmar, 2011; Colmar, 2014; Ezell et al., 2000; Justice, Kaderavek et al., 2005; Justice et al., 2015; Koppenhaver et al., 2001; Pile et al., 2010). Studies were variable in their training schedule, though training was offered more than once in two studies (Colmar, 2011; Colmar 2014; Koppenhaver et al., 2001).

Outcomes Assessed

Comparable to studies with children who are typically developing or at-risk, interventions for children with disabilities focused on improving the specific skills targeted within shared book reading. Similar to results in studies with children who are typically developing, researchers report improvement in expressive and receptive language skills, overall oral language skills (e.g., total language score, MLU), and additionally in literal and inferential language skills (Colmar, 2011; Colmar, 2014; van Kleeck et al., 2006; Voelmle & Storkel, 2015; Yoder et al., 1995). However, in contrast, studies with children with more significant disabilities target a broader range of skills beyond oral language. Researchers have noted significant gains in spontaneous language use for children with ASD (Bellon et al., 2000), and increased participation, vocalizations, eye gaze, symbolic communication, and use of AAC for children with multiple disabilities (Browder et al., 2008; Hudson & Test, 2011; Koppenhaver et al., 2001; Mims et al., 2009).

These studies have also been found to increase children's preliteracy skills including alphabet knowledge, concepts of print, alliteration, identification of initial sounds, name writing, and rhyming skills (Ezell et al., 2000; Justice, Kaderavek et al., 2005; Justice et al., 2015; Kaderavek & Justice, 2002; Pile et al., 2010; Ziolkowski & Goldstein, 2008). While not specifically targeted, shared interactive reading often results in increased turn taking exchanges for children with disabilities and the adult facilitating the book reading, creating increased opportunities for scaffolding of language skills (Pile et al., 2010).

Dependent on the outcome variable assessed, measurement of the outcomes was often completed using standardized assessments (e.g., PPVT, EOWVT, TELD, CELF-P2; ITPA) (Colmar, 2011; Colmar, 2014; Pile et al., 2010; van Kleeck et al., 2006). More often, researcher developed assessments, curriculum based measures (i.e., IGDIs, DIBELS), and observations of specific skills were used (Bellon et al., 2000; Browder et al., 2008; Ezell et al., 2000; Justice, Kaderavek et al., 2005; Koppenhaver et al., 2001; Mims et al., 2009; Voelmle & Storkel, 2015; Yoder et al., 1995; Ziolkowski & Goldstein, 2008).

Summary

Research in shared interactive reading for children with disabilities has most often occurred between parents and their children with more mild language impairments. Its development has followed that of shared interactive reading for children who are typically developing or at-risk. Justice and colleagues have observed how shared interactive reading occurs naturally between parents and their children with disabilities (McGinty et al., 2012) as

well as developed interventions in the same context to target preliteracy skills (Ezell et al., 2000; Justice & Kaderavek, 2005; Justice et al., 2015). Similarly, Colmar (2011, 2014) trained parents to engage in shared interactive reading with their children with language impairments using milieu strategies significantly impacting expressive language skills with smaller gains in receptive skills. However, additional researchers have trained parents in similar strategies, and while positively affecting their ability to engage in interactive storybook reading, results were not significant for child outcomes (Pile et al., 2010).

Shared interactive reading for students with disabilities has also been researched in school settings. In this setting, children with more significant disabilities (e.g., ASD, multiple disabilities, significant intellectual disability) have participated in shared interactive reading with researchers often using modifications such as manipulative objects, AAC devices, or adaptive books with positive outcomes noted for spontaneous language or general participation (Bellon et al., 2000; Browder et al., 2008; Mims et al., 2009). Researchers have also evaluated shared interactive reading in preschools for children with language impairments to target literal and inferential language skills (van Kleeck et al., 2006), phonological awareness (Ziolkowski & Goldstein, 2008) and vocabulary skills (Voelmle & Storkel, 2015).

Implications

Shared interactive book reading is a well-researched strategy for children who are typically developing and those at-risk, with evidence accumulating for use with children with language impairments and more significant disabilities. As the framework for using shared interactive reading is quite flexible, it is a practical strategy for use both by parents in the home setting and for teachers in the preschool classroom. Simply engaging children in discussion around a shared book can increase their comprehension of the text as well as improve specifically targeted skill areas. As it appears shared interactive reading has the greatest effects on language development, parents and teachers should focus on questions and comments around specific vocabulary words (i.e., individually developed for each child or generally developed for small groups), as well as oral language skills (e.g., answering questions, initiating language, commenting). Shared interactive reading works well one-on-one, or in small or large groups for the classroom. Opportunities to engage children should be distributed before, during, and after reading the text. Books can be selected to emphasize a particular skill being taught (i.e., science texts for scientific vocabulary) or to supplement a general classroom theme (i.e., farm books for a farm theme). The flexibility and low cost of implementing shared interactive reading makes it an accessible and easy to employ for school and home for children with a wide range of ability levels.

Future Research Suggestions

While there is an abundance of research on shared interactive reading for children who are typically developing and those at-risk, and a growing research base for children with disabilities, several areas of focus should be considered for future studies. Researchers should evaluate which skills are best to target using shared interactive reading, what the optimal duration, or dosage, is for varying populations, if there is a difference in individual, small or large group implementation, and training strategies which best facilitate implementation with fidelity. Specifically, studies using shared interactive reading with children with language impairments and more significant disabilities are lacking.

Currently, limited evidence exists for shared interactive reading's effectiveness to increase children's alphabet knowledge and general reading achievement in preschool, while there is more evidence for comprehension and general language development (WWC, 2015). Future research should focus on preliteracy skills, such as alphabet knowledge, concepts of print, and phonemic awareness specifically to determine if shared interactive can be effective in improving these skills across populations. Additionally, language comprehension has not been evaluated as frequently, potentially due to the lack of ability to define and measure it in research studies. Therefore, more precisely defining language comprehension and language development (e.g., vocabulary, oral language skills) would be beneficial in future studies. It may be specific skills lend themselves better to shared interactive reading, or the setting and population may interact differently for different effects. Indeed, it will be important to conduct more studies of shared interactive reading in international contexts.

While there is great variation in the length of implementation of shared interactive reading, researchers have just begun to focus on optimal duration, or dosage. Voelmle and Storkel (2015) recently showed that 36 exposures to novel words were necessary for word learning and retention for preschool children with SLI. However, this dosage

likely varies across populations and skills targeted. Further research is needed to determine how often shared interactive reading should be used to affect positive change on specific skills. Related to duration of implementation is determining if shared interactive reading produces differential effects when used in one-to-one readings versus small and large group settings. This again may relate directly to skills being targeted and the need for individualization of skill levels of the children involved. While there is a mixed representation of individual and group reading in the literature, there is not a comparison to determine which is more effective.

Finally, if shared interactive reading is to be used effectively and with fidelity by parents and classroom teachers, training modalities should be evaluated to determine the most efficient and effective strategies. Across populations there is great variability on how trainings have been conducted. It may be that more research is first needed in the above criteria (e.g., duration, group size, skills targeted) before training format can be determined. However, researchers can begin to determine which components are critical for effective implementation by adults other than researchers.

Conclusion

In summary, shared interactive book reading has a breadth of research for children who are typically developing and those at-risk, with more research emerging for children with disabilities. There exists considerable variability in the skills targeted, the way populations are defined, the duration of intervention, measures used to evaluate outcomes, and participants and settings. However, the preliminary evidence is promising, particularly given the ease and cost of using this strategy with preschool children in home and school settings. Further research is needed, particularly for children with identified disabilities, to determine optimal ways to positively affect change in a variety of skills.

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