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Learning letter names and sounds: Effects of instruction, letter type, and phonological processing skill ☆

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ABSTRACT

Preschool-age children ($N = 58$) were randomly assigned to receive instruction in letter names and sounds, letter sounds only, or numbers (control). Multilevel modeling was used to examine letter name and sound learning as a function of instructional condition and characteristics of both letters and children. Specifically, learning was examined in light of letter name structure, whether letter names included cues to their respective sounds, and children's phonological processing skills. Consistent with past research, children receiving letter name and sound instruction were most likely to learn the sounds of letters whose names included cues to their sounds regardless of phonological processing skills. Only children with higher phonological skills showed a similar effect in the control condition. Practical implications are discussed.

Introduction

Alphabet knowledge is essential for learning to read and spell in English (Adams, 1990; Ehri, 1987; Ehri, 1998). Along with oral language and phonological awareness, it represents one of the most

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important emergent literacy skills acquired by young children (Whitehurst & Lonigan, 1998). Children's alphabet knowledge has long been deemed one of the best predictors of later word reading ability (e.g., Adams, 1990; Hammill, 2004; Scarborough, 1998; Schatschneider, Fletcher, Francis, Carlson, & Foorman, 2004). Likewise, failure to acquire such knowledge is an important indicator of risk for later reading difficulties (e.g., Gallagher, Frith, & Snowling, 2000; O'Connor and Jenkins, 1999; Torppa, Poikkeus, Laakso, Eklund, & Lyytinen, 2006).

The significance of alphabet knowledge for acquiring literacy skills is reflected in many recent initiatives. For example, many state curriculum frameworks include letter name and sound learning for young children (Florida Department of Education, n.d.; Massachusetts Department of Education., 2001; Ohio Department of Education., 2007). Both the Early Reading First and Reading First programs set explicit goals seeking to increase participants' letter knowledge and understanding of letter–sound correspondences (U.S. Department of Education., 2002, 2003), as does the Head Start program (U.S. Department of Health and Human Services, 2003). Early childhood curricula used in preschool and kindergarten classrooms commonly include an alphabetic component (Justice, Pence, Bowles, & Wiggins, 2006). These curricula vary markedly in how alphabet knowledge is taught, perhaps a reflection of our current lack of knowledge about letter name and sound development and best practices for fostering their acquisition (Piasta & Wagner, 2010). Despite widespread agreement as to the importance of letter name and sound knowledge, we know much less about children's alphabet knowledge development than we do about the development of other emergent literacy skills.

In the current study, we modeled children's gains in alphabet knowledge as a result of targeted letter name and/or sound instruction to examine the role of letter names in promoting letter sound acquisition. In so doing, we sought not only to answer basic research questions concerning children's alphabet development but also to provide insight into how such knowledge might translate into practice in early childhood classrooms.

Development of alphabet knowledge: Effects of letter properties and child characteristics

Letter properties

A number of letter properties appear to affect the ease with which their names and sounds are learned. These include whether the letter is a consonant or a vowel, the letter's position within the alphabet, the letter's manner of articulation, whether the letter is associated with more than a single sound (e.g., B and /b/ vs. C and /k/, /s/), the age at which the sound is typically produced, the confusability of the letter's shape or pronunciation with other letters, and frequency in print materials (Evans, Bell, Shaw, Moretti, & Page, 2006; Justice et al., 2006; McBride-Chang, 1999; Treiman & Kessler, 2003; Treiman, Kessler, & Bourassa, 2001; Treiman, Kessler, & Pollo, 2006; Treiman, Levin, & Kessler, 2007; Treiman, Tincoff, Rodriguez, Mouzaki, & Francis, 1998).

The current study focused on one particular letter property: letter name structure. Letter name structure refers to how letter sounds are represented in their names and has been found to influence knowledge of letter sounds in young children (Evans et al., 2006; Justice et al., 2006; Levin, Shatil-Carmon, & Asif-Rave, 2006; McBride-Chang, 1999; Read, 1971; Treiman, Berch, & Weatherston, 1993; Treiman, Pennington, Shriberg, & Boada, 2008; Treiman, Tincoff, & Richmond-Welty, 1996; Treiman, Tincoff, & Richmond-Welty, 1997; Treiman, Weatherston, & Berch, 1994; Treiman et al., 1998). Many letter names contain their corresponding sounds, taking one of two forms: the consonant–vowel (CV) pattern of /consonant sound/ + /i/ as in the letter B or the vowel–consonant (VC) pattern of /ɛ/ + /consonant sound/ as in the letter F. Preschoolers are well aware of these regularities, particularly the CV form (Treiman et al., 1997). These findings are consistent with the idea that children use their segmentation abilities and the initial sounds of letter names as cues for the letters' sounds. Treiman and colleagues (1997, 1998) reported that children were more likely to know the sounds of letters in which the first sounds of the letter names correctly correspond to their sounds (i.e., CV letters) than of letters with names that began with vowels (i.e., VC letters) or letters with names and sounds that are not associated (i.e., NA [no association] letters such as W) (see also Justice et al., 2006; McBride-Chang, 1999).

The letter name-to-sound facilitation effect suggested by this correlational research has been investigated in three training studies (see also de Jong, 2007). Using a completely within-participants