The purpose of this study was to validate the construct of explicit phonemic awareness. Performance on a phoneme segmentation measure that included words that were easy and hard to segment was compared across groups of adults: speech-language pathologists, first grade teachers, and adults who are not educators. Speech-language pathologists outperformed the other groups on easy and hard words. First grade teachers and adults who are not educators did not differ on easy words, but adults who are not educators outperformed first grade teachers on hard words. Results suggest that training adults in explicit phonemic awareness. Professional development in this area is needed for educators.

## INTRODUCTION

Research has demonstrated the importance of teacher content knowledge in improving student literacy outcomes (Ferguson, 1991). However, research to date has utilized broad measures of teacher knowledge of literacy rather than measures of specific areas within literacy (e.g., phonemic awareness).

Phonemic awareness, the ability to analyze speech sounds of words in spoken language (Maffett, 1972), is an important precursor to word decoding skills (Adams, 1990). To scaffold instruction for children who are learning to understand the written code, educators need strong knowledge about how print represents the sound structure of words and how spoken words can be segmented into phonemes. There is abundant evidence that educators do not have this strong knowledge base (e.g., Cunningham, Perry, Stanovich, & Stanovich, 2004). Observations of early literacy development reveal that children have increasingly ability to analyze speech sounds in words, evident in the misspellings of young children (Reed, 1986; Werfel & Schuele, 2012). Logically, researchers may assume that phonemic awareness acquired in the early stages of literacy acquisition is retained across the lifetime. However, adult performance challenges this assumption. Educator performance on sound analysis has been consistently poor (e.g., Moats, 1994; Spencer, Schuele, Guilfoil, & Lee, 2008). For example, educators are more likely to report that BOX has three sounds rather than four sounds. To conclude that this inaccurate sound analysis reflects deficient phonemic awareness appears illogical. After all, these educators are proficient readers and writers. We suggest that the analysis of the sound structure of words with a focus on orthography. Finally, adults who are not educators receive no special training to think about sounds or spellings of words.

## PARTICIPANTS

Two SLPs, two first grade teachers, and 36 adults who are not educators. Data from SLPs and teachers were analyzed from a 5-year period at professional education workshops. Adults who are not educators were recruited via a social media website. We chose three groups to represent the different training received as adults. SLPs are trained to explicitly analyze sounds in words. First grade teachers are trained to teach children how letters represent spoken words with a focus on orthography. Adults who are not educators do not receive special training to think about sounds or spellings of words.

## PROCEDURES

Study data were collected using one of two methods: (a) SLPs and general educators completed a paper/pencil measure of phoneme segmentation and (b) adults who are not educators completed the same measure using an online assessment distributed using REDCap electronic data capture tools hosted at Vanderbilt University (Harris et al., 2009).

The phoneme segmentation measure consisted of 21 words that varied in length from two to five phonemes (11 easy, 10 hard). Easy words had close mappings of speech and print (e.g., cat), whereas hard words had less transparent mappings (e.g., fuse). Participants were asked to report the number of sounds in each word.

## RESULTS

The tendency of educators to be influenced by orthography when asked to analyze sounds may be the result of educator training programs that focus heavily on phonics. Moats and Lyon (1996) argued that educators must be able to “think beyond print” (p. 83) to provide effective instruction. Perhaps teacher training programs should re-evaluate the types of skills targeted during pre-professional training. Additionally, the poor performance of first grade teachers on analyzing sounds in hard words suggests that professional development in this area is needed.

One future direction in this line of research is to evaluate the effect of educators’ explicit phonemic awareness on student phonemic awareness and literacy outcomes. Given the difficulties that educators face in analyzing the sound structure of words, professional development is likely needed to increase teachers’ abilities to analyze phonological representations words without interference from stored MGRs of words.

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**What is Explicit Phonemic Awareness?**

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