Development of a Vocabulary General Outcome Measure

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Introduction

The simple view of reading (Gough & Tunmer, 1986; Hoover & Gough, 1990) provides a framework for reading instruction that includes skills for accurate word recognition (e.g., phonemic awareness, alphabet knowledge including letter names and letter sounds, basic and advanced phonics) as well as skills involved in the comprehension of language. While there currently exists an array of general outcome measures with technical adequacy to measure decoding skills and the precursors to them, there are no current measures that have technical adequacy for screening and progress monitoring of language comprehension, including vocabulary, within a general outcomes approach to assessment.

The assessment of vocabulary and oral language skills is critical to improving reading outcomes for students as there is strong evidence that children with a history of speech/language delay in preschool are at risk for future difficulties in reading, especially when those speech/language delays persist into kindergarten (Stallings et al., 2015; Pennington & Bishop, 2005; Stavling et al., 2018).

Purpose and Research Questions

The purpose of this study was to examine initial evidence of reliability and validity of an experimental general outcome measure of vocabulary and oral language (VOL) skills. The research questions were:

1. What are the descriptive statistics and distributions of scores on the VOL measure administered at the middle of end of grades K–3?
2. What is the relationship between performance on the VOL measure and performance on Acadience Reading K–6 measures administered concurrently?

Method

Participants

Participants in this pilot study included students in kindergarten through third grade from one diverse elementary school in the upper Midwest (70% Hispanic, 40% White, 1% Black, 3% multicultural; 78% eligible for free or reduced lunch). The sample included 35 kindergarten students, 32 first-grade students, 36 second-grade students, and 53 third-grade students (15 students at the end of the year).

Procedures

Measure Development

All words appearing on the VOL measure were selected from a carefully constructed word pool. This pool was developed with consultation of a Sample of words frequency of words in text, difficulty of words, and utility of words. Frequency of words in test text was determined by examining Word Zones for 4,000 Simple Phrase Families (Hiebert, 2012). This database classifies words into different zones based on frequency in text and ranges from Zone 1 (most frequent) to Zone 6 (least frequent).

We used three sources of information to determine word difficulty. First, we examined Words Their Way (Biemiller, 2014). Words in this database are assigned to one of six levels based on the percentage of students who know the meaning of each word at various grade levels. Words that we considered to be easy were known by a high percentage of students in the early grades, whereas words that we considered to be difficult were known by a low percentage of students in the upper grades. Second, we examined Age of Acquisition norms for 30,000 English words (Rapaport et al., 2010). Age of acquisition refers to the age at which a word is typically learned. We included a wide range of words that are typically learned from the preschool years up through middle school. Third, we considered the concreteness of the words as another way to judge difficulty. We used concreteness ratings from a study conducted by Brynhout and colleagues (2013) that resulted in ratings for 40,000 English words. Words were rated on a 5-point scale with ratings of 1 indicating that a word is very abstract to ratings of 5 indicating that a word is very concrete.

We were interested in selecting words that would be useful for students to know. We used a model developed by Bach and colleagues (2004) to judge the utility of the words in our word pool. This model includes 3 tiers of words. Tier 1 includes basic words that are known by most students when they enter kindergarten (e.g., walk, eat). Tier 2 includes words that are conceptually easy to understand but that use a label that is at a higher level than the basic labels found in Tier 1 (e.g., musician, shoreline). Finally, Tier 3 includes words with a low frequency of use that are usually specific to a particular domain (e.g., photosynthesis, hypothesis).

For each time point at each grade level, we selected 15 words including five nouns, five verbs, and five adjectives. Words within each grade level were categorized as easy, medium, or difficult based on age of acquisition ratings. All grade level lists began with two easy nouns. After that, words were assigned to tiers. Each tier included a noun, verb, and adjective and an easy, medium, and difficult word (e.g., a hard noun, easy verb, medium adjective).

Results

Descriptive Statistics

Means, standard deviations, and distributions of scores on the VOL measure are presented in Figures 1–6.

![VOL Measure Results](image)

Concurrent Validity of Vocabulary Oral Language

Results of the correlational analysis are reported in Table 1. The concurrent correlations between VOL and the Acadience Reading K–6 RCS scores are in the moderate range (.30–.54).

Discussion

Distributions show a range of scores at each grade level.

Reliability

Reliability data are presented in Table 1. Cronbach’s alphas range from .609–.858.

![Acadience Reading K–6 Technical Manual](image)

TABLE 1

<table>
<thead>
<tr>
<th>Grade</th>
<th>Cronbach’s α</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kindergarten</td>
<td>.803</td>
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<tr>
<td>Middle of Year</td>
<td>.808</td>
</tr>
<tr>
<td>End of Year</td>
<td>.754</td>
</tr>
<tr>
<td>Grade 1</td>
<td>.822</td>
</tr>
<tr>
<td>Middle of Year</td>
<td>.771</td>
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<tr>
<td>End of Year</td>
<td>.803</td>
</tr>
<tr>
<td>Grade 2</td>
<td>.856</td>
</tr>
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</table>


![Acadience Reading K–6](image)