Computer Based Assessment System for Reading (CBAS-R) 1.0:
Hierarchy and Item Development for Vocabulary

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Abstract
The purpose of this report is to define the domain of Vocabulary and illustrate how this domain is assessed. The definition of vocabulary has gone through a number of iterations, especially as different sources are considered. The current report offers its own definition of the construct attempting to be measured is offered. Further, a distinction between oral and writing vocabulary is made with sample assessment presented for each. The hierarchical structure of item creation is discussed, and sample items are offered.

Keywords: vocabulary, CBAS-R
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**Vocabulary**

“Vocabulary knowledge is fundamental to reading comprehension; one cannot understand text without knowing what most of the words mean” (Nagy, 1988, p. 1). Developing a reading vocabulary typically enlists one’s oral vocabulary: as a beginning reader comes across words that are less familiar in print, these are decoded and “mapped onto the oral vocabulary the learner brings to the task” (NRP, 2000, p. 4-3). If the word is not in the learner’s oral vocabulary, decoding becomes less helpful and contextual information more important. Learning new words from text involves connecting the orthography to multiple contexts and establishing a flexible definition. Vocabulary knowledge, then, includes both definitional knowledge and contextual knowledge (Stahl, 1999). Some words in text are so familiar that they no longer require explicit processing; these are referred to as a sight word vocabulary (NRP). See the appendix for a list of the 100 most common sight words.

**Oral vocabulary**

Oral vocabulary refers to those skills used to identify and apply word meanings to speak and listen effectively. The oral vocabulary is typically and initially more expansive than the written vocabulary. Repeated exposure to correspondent oral and written vocabulary words contributes to the development of reading skills. The words that are familiar to the child from his listening and speaking experiences facilitate reading. When children begin to read, they mostly read words that are in their speaking and listening vocabularies. As they progress in their reading development, they learn new words from reading and those translate into their oral vocabulary. That process usually begins in about second grade.
The early development of oral vocabulary can enable or disable reading comprehension. “We have become increasingly aware of the wide range in oral vocabulary that children possess at each grade level and how early differences in knowledge tend to linger” (Cunningham & Stanovich, 1998). Early differences in the vocabulary skills of young students often expand year by year (Hart & Risley, 1995; Snow, Barnes, Chandler, Goodman, & Hempphill, 1991; Stanovich, 1986), which enables those who develop skills early and disables those who do not.

Vocabulary assessments often include matching words to definitions using a multiple choice format to identify the meaning, the synonym, and/or an antonym of a word. For example, “What is another word for pony? horse, house, cow, tooth”

**Written vocabulary**

Written or reading vocabulary refers “to words that are used or recognized in print” (NRP, p. 4-16). The words are familiar to the reader and are established in his/her reading and writing vocabularies. Written vocabulary develops as children learn to recognize their name and environmental print such as the symbol for McDonald’s restaurant. Written vocabulary grows substantially every year for normally developing readers. Children enter school with relatively small written vocabularies; their “reading vocabulary is likely to soar at a rate of 3,000 to 4,000 words a year” (Graves, Juel, & Graves, 2004, p. 220).

**Sample Assessments**

The format of written vocabulary assessments often use the same format as oral vocabulary assessments by using multiple choice items to assess word knowledge by identifying definitions, synonyms, and antonyms. For example, “What is the opposite of the word fast? quick, fat, slow, jar”
Procedure

Hierarchical structure

The contents of this section provide an overview of the a priori hierarchical structure for item and CAT development. This structure will be evaluated and updated as the items are developed and field tested.

Vocabulary Item Categories

A. Category 1: Listening and Speaking Vocabulary
   1. Subcategory 1: Identifies the Correct Picture When Given a Word
   2. Subcategory 2: Identifies Synonyms
   3. Subcategory 3: Identifies Antonyms
   4. Subcategory 4: Multiple Meaning Words

B. Category 2: Reading and Writing Vocabulary
   1. Subcategory 1: Identifies the Correct Written Word When Given a Word
   2. Subcategory 2: Identifies Synonyms
   3. Subcategory 3: Identifies Antonyms
   4. Subcategory 4: Identifies Multiple Meaning Words
   5. Subcategory 5: Identifies Homophones
References


Appendix

Sample Vocabulary Items

This section contains screen shots of sample test items in the hierarchical structure as defined in the Procedure section.

Identifying Antonyms

Audio: “Choose the best answer.”

If I am sad, I am NOT ________.

a. cheery
b. gloomy
c. unhappy
d. down

Audio: “Choose the best answer.”

Traders in the avarice, indifference, or imbecility of parents, and the helplessness of children; ignorant, sordid, brutal men, to whom few considerate persons would have entrusted the board and lodging of a horse or a dog; they formed the worthy cornerstone of a structure, which, for absurdity and a magnificent high-minded LAISSEZ-ALLER neglect, has rarely been exceeded in the world.

--“The Life and Adventures of Nicholas Nickleby”, Charles Dickens

Choose the antonym for sordid.

a. base
b. jovial
c. honorable
d. destructive
Identifying the Correct Word

Audio: “Click on the picture of the ball.”

Audio: “Choose the correct form of the word to complete the sentence.”

Billy and Danny ____ brothers.

a. is  
b. was  
c. are  
d. as
Fill in the Blank

Audio: “Choose the best answer to finish the sentence.”

My grandfather ____ this house when he was only 20 years old and now our family lives here.

a. pounded
b. painted
c. built
d. covered

Audio: “Choose the best answer.”

The Outback is the remote arid area of Australia, although the term informally can refer to any land outside of the main urban areas. The term “the outback” is generally used to ____ locations that are comparatively more remote than those areas deemed “the bush”.

--wikipedia

a. relegate
b. denote
c. stereotype
d. infer