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

Ann Kroll
Lisa Krall
Theodore J. Christ
University of Minnesota

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Abstract
The purpose of this report is to define the domain of Phonics and illustrate how this domain is assessed. Phonics is the set of skills readers use to identify and manipulate printed letters (graphemes) and sounds (phonemes). Phonic skill development “involves learning the alphabetic system, that is, letter-sound correspondences and spelling patterns, and learning how to apply this knowledge” to reading (NRP 2000, 2-89). The goal of phonics instruction is to enable learners to acquire sufficient knowledge of the alphabetic code for reading and comprehension.

*Keywords: phonics, CBAS-R*
### Research Log

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Phonics

Phonics is the set of skills readers use to identify and manipulate printed letters (graphemes) and sounds (phonemes). It is the correspondences between spoken and written language. This connection between letters, letter combinations, and sounds enable reading (decoding) and writing (encoding). Phonic skill development “involves learning the alphabetic system, that is, letter-sound correspondences and spelling patterns, and learning how to apply this knowledge” to reading (NRP, 2-89).

The goal of phonics instruction is to enable learners to acquire sufficient knowledge of the alphabetic code for reading and comprehension. “Phonics instruction is based on the assumption that, in sounding out a word, the child will hit upon something that is recognizable in his or her vocabulary” (Juel, 2006, p. 421). Systematic phonics instruction is most beneficial to beginning readers in kindergarten and first grade (NRP, 2000). “Phonics is, of course, the method that is supposed to foster full alphabetic processing to enable children to handle the orthography” (Juel, 2006, p. 422). Orthography is the combination and patterns of letters that are used to represent sounds that comprise words. There is now ample evidence that letter-sound instruction facilitates learning to read compared with methods with little or no phonics instruction (Adams, 1990; Chall, 1996; Rayner et al., 2001; NRP, 2000).

Sample Assessments

Phonics is often assessed with matching tasks, such as the activity of matching letter sounds with letter names or matching pictures of objects with corresponding letter sounds (e.g., initial, middle, or ending sounds).
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. The order of the categories and subcategories do not necessarily represent the sequence of chronological development.

Phonics Item Categories

A. Category 1: Identifies Consonant Letter Sounds in Isolation (b, c, d, f, g, h, j, k, l, m, n, p, qu, r, s, t, v, w, x, y, z)

B. Category 2: Beginning Single Consonants
   1. Subcategory 1: Identifies Beginning Single Consonant Sounds in Isolation

C. Category 3: Ending Single Consonants
   2. Subcategory 2: Identifies Ending Single Consonants in the Context of a Sentence

D. Category 4: Short Vowel Sounds
   1. Subcategory 1: Identifies Short Vowel Sounds in Isolation
   2. Subcategory 2: Identifies Short Vowel Sounds in the Context of a Word
3. Subcategory 3: Identifies Short Vowel Sounds in the Context of a Sentence

E. Category 5: Long Vowel Sounds

1. Subcategory 1: Identifies Long Vowel Sounds in Isolation
2. Subcategory 2: Identifies Long Vowel Sounds in the Context of a Word
3. Subcategory 3: Identifies Long Vowel Sounds in the Context of a Sentence

F. Category 6: Vowel Combinations

1. Subcategory 1: Identifies Vowel Combinations in Isolation
2. Subcategory 2: Identifies Vowel Combinations in the Context of a Word
3. Subcategory 3: Identifies Vowel Combinations in the Context of a Sentence

G. Category 7: R-Controlled Vowels

1. Subcategory 1: Identifies R-Controlled Vowels in Isolation
2. Subcategory 2: Identifies R-Controlled Vowels in the Context of a Word
3. Subcategory 3: Identifies R-Controlled Vowels in the Context of a Sentence

H. Category 8: Beginning Consonant Blends

1. Subcategory 1: Identifies Beginning Consonant Blends in Isolation
2. Subcategory 2: Identifies Beginning Consonant Blends in the Context of a Word

I. Category 9: Ending Consonant Blends

1. Subcategory 1: Identifies Ending Consonant Blends in Isolation
2. Subcategory 2: Identifies Ending Consonant Blends in the Context of a Word

J. Category 10: Beginning Consonant Digraphs

1. Subcategory 1: Identifies Beginning Consonant Digraphs in Isolation

2. Subcategory 2: Identifies Beginning Consonant Digraphs in the Context of a Word

3. Subcategory 3: Identifies Beginning Consonant Digraphs in the Context of a Sentence

K. Category 11: Ending Consonant Digraphs

1. Subcategory 1: Identifies Ending Consonant Digraphs in Isolation

2. Subcategory 2: Identifies Ending Consonant Digraphs in the Context of a Word

3. Subcategory 3: Identifies Ending Consonant Digraphs in the Context of a Sentence

L. Category 12: Phonograms/Word Families

1. Subcategory 1: Identifies Phonograms in Isolation

2. Subcategory 2: Identifies Phonograms in the Context of a Word

3. Subcategory 3: Identifies Phonograms in the Context of a Sentence
**References**

**Additional references used to determine categories for the Domain**


Appendix

Sample Phonics Items

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

Beginning Consonants/Digraphs

Audio: “Click on the word that begins with the /s/ sound.”

![Sample Phonics Item 1 Image]

Audio: “Click on the /th/ sound, as in the word ‘thank’.”

![Sample Phonics Item 2 Image]
Letter Sounds

Audio: “Click on the /c/ sound.”

Audio: “Click on the /m/ sound.”
Phonograms

Audio: “Click on the one that is a real word.”

a. aweight
b. await
c. awate
d. awayt

Audio: “Click on the word that ends with ‘-cious’.”

a. happiness
b. vision
c. precious
d. measure