The Cart vs. the Horse: How Phonological Awareness and Phonics Lay the Foundation for Proficient Reading

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Introducing myself

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Research interests

– alphabet knowledge
– phonological awareness
– early writing
– word study
– reading fluency

Teaching and professional development partnerships in:

– East Lansing
– Grant
– Flint
– Ottawa ISD
– Muskegon ISD
– Oakland ISD

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How do children learn to read and write?
The State of Reading in Michigan
2015 NAEP Results
The Third Grade Reading Bill

- Early screening assessments in K-3
- Individualized intervention for struggling readers K-3
- Support from early literacy coaches
The Third Grade Reading Bill

What's down here?

phonemic awareness, phonics, fluency, vocabulary, and comprehension
The Cognitive Model

McKenna & Stahl, 2015
The Cognitive Model

- Comprehension
  - Fluency
  - Vocabulary
- Phonics
- Phonemic Awareness

McKenna & Stahl, 2015
The Alphabetic Principle

Reading and writing in English depends on associating graphemes (letters) and phonemes (sounds)

Liberman, Shankweiler, & Liberman, 1989
Phonological awareness

is the ability to pay conscious attention to the sounds that make up language.
Linguistic Grain Size

• The grain size of Chinese is the word/concept (logographic)

• The grain size of Japanese is the syllable (syllabary)

• The grain size of English is the phoneme (alphabet)

Ziegler & Goswami, 2005
In alphabetic languages like

- Phonetic awareness is the best predictor of future reading success.
- Preschool phonemic awareness accounts for 50% of the variance in reading proficiency at the end of first grade.
- Phonetic awareness and reading proficiency are highly correlated through the school years.

Blachman, 1991; Juel, 1991; Stanovich, 1986; Wagner et al., 1994
Frank Vellutino’s research

- Identified that dyslexia/reading disabilities = deficits in phonemic awareness
  - Not a visual problem
  - Not related to IQ
- Can be identified early (Kindergarten vs. 3rd grade)
- Can be prevented with early intervention
- Formed the basis of the “response to intervention” model
  - Vellutino and Scanlon (2002) argue that we can’t know if a child has a reading disability or not until we understand what instruction they have had.
  - Dyslexic readers are those that continue to struggle with phonemic awareness despite high quality instruction; these students need more support and individual instruction

(Vellutino, Fletcher, Snowling, & Scanlon; Vellutino & Scanlon, 2002)
How does this work?

Phonological awareness

Phonemic awareness

Phonics

Reading
Linnea Ehri’s Phases of Word Recognition

• Describes five developmental phases of word recognition (Ehri, 2005)
Pre-alphabetic phase

- Children rely on visual cues (e.g., shape, logo) to recognize words
- Children do not yet make connections between print and sounds
PA in the pre-alphabetic phase

Phonological awareness is just beginning!

- Focused on

- Segmenting sentences into words orally
- Rhyme
- Alliteration
Partial alphabetic phase

• Child begin to use letter-sound connections to read and write words
PA in the partial alphabetic phase

• Children begin to focus on words and sounds *within* words
  • Onset-rime
  • Syllables
Concept of word in text

- Children need to understand what a word is and be able to identify it in text so that they can:
  - Develop full phonemic awareness
  - Begin to decode words
  - Begin to write accurately

Flanigan, 2007; Morris, 1993
Concept of word in text

Before phonological awareness is developed:

Child’s perception of text: Bxxpxxxxxxxxxxxxxx.
Text: Ben plays soccer for fun

After children develop beginning sound awareness & letter-sound knowledge:

Child: Bxx pxxxx sxxxxx fxx fxx.
Text: Ben plays soccer for fun.

Flanigan, 2007
Once children understand where the words are, they can:

- Develop full phonemic awareness
- Engage in phonics productively
- Begin to read words and store them in memory

Flanigan, 2007
Concept of word in text

Children develop this understanding over time:

- PA of beginning sounds & letter-sound knowledge
- Concept of word
- Full phonemic awareness
- Word recognition

Flanigan, 2007; Morris, 1993
Full alphabetic phase

- Children can decode words using letter-sound relationships
  - Not always accurate, but all sounds are accounted for
PA in the full alphabetic phase

• Children begin to fully blend and segment words into individual phonemes

• Focus on *phonemic awareness* = the ability to identify and manipulate the individual sounds (phonemes) within words.
Phonemic awareness is . . .

• The understanding that a single-syllable word such as “dog” can be subdivided into beginning, middle, and ending sounds (segmentation)
  • “dog” = /d/ - /o/ - /g/
  • “splat” = /s/ - /p/ - /l/ - /a/ - /t/

• The understanding that individual phonemes can be combined to form words (blending)
  • /d/ + /o/ + /g/ = “dog”
  • /s/ + /p/ + /l/ + /a/ + /t/ = “splat”

• Knowledge or awareness of the distinctive features of individual phonemes (discrimination)
  • /b/ vs. /d/
  • /s/ vs. /sh/
Phonemic awareness is . . .

- A prerequisite for reading in English
  - The phoneme is the basic unit of sound
  - Phonics = the ability to associate phonemes with letters to read and write words
  - 10 phonemes = 10,000 words
Phonological Awareness Development

Words
- Rhyme: dog, fog, bog, frog
- Alliterative: bog, bat, bag, ball, box
- Syllables: dog-house, dog-gy, splat-ter
- Onset-rime: d-og, sh-ip, spl-at

Phonemes: d-o-g, s-p-l-a-t, sh-i-p, t-r-e-a-t

Ehri, 2005; Flanigan, 2007; Yopp & Yopp, 2000
Phonemic awareness vs. phonics

Do we need both?

Phonemic awareness = sound

Phonics = sound + print
Carson, Gillon, & Boustead, 2013

• Tested an intensive, 10-week, PA-focused intervention vs. regular reading and phonics instruction with no PA focus

• 129 5-year-olds, including those with language difficulties
What did this program look like?

• 10 weeks
• 30 minutes, 4 x week
  • 5-minute review
  • 2 10-minute activities
  • 5 minutes of shared reading, emphasizing the targeted sounds
What did this program look like?

<table>
<thead>
<tr>
<th>Week</th>
<th>PA skill</th>
<th>Activity description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Rhyme</td>
<td>Rhyme bingo and odd-one-out activities were used by the teachers to encourage the</td>
</tr>
<tr>
<td></td>
<td></td>
<td>children to listen for rhyming components of spoken words.</td>
</tr>
<tr>
<td>2</td>
<td>Initial phoneme identity</td>
<td>Initial sound bingo, initial sound matching, and odd-one-out activities were used to draw the children’s attention to the first sound in spoken words. Medial or final sounds were included for children with more advanced skills.</td>
</tr>
<tr>
<td>3</td>
<td>Final phoneme identity</td>
<td>Final sound bingo, final sound matching, and odd-one-out activities were used to draw the children’s attention to the final sound in spoken words. Medial or final sounds were introduced for children with more advanced skills.</td>
</tr>
<tr>
<td>4 &amp; 5</td>
<td>Phoneme blending</td>
<td>Drawing, singing, and bingo games were used to teach the children to blend words together. Two- and three-phoneme words were predominantly used; however, four-phoneme words and initial and final consonant blends were used for children with more advanced abilities.</td>
</tr>
<tr>
<td>6 &amp; 7</td>
<td>Phoneme segmentation</td>
<td>Drawing, singing, and bingo games were used to teach the children how to segment sounds in words. Two- and three-phoneme words were used; however, four-phoneme words and initial and final blends were used to extend students.</td>
</tr>
<tr>
<td>8 &amp; 9</td>
<td>Manipulation</td>
<td>Large letter cards or a white board were used to teach the children to manipulate letter sounds in words to create new words.</td>
</tr>
<tr>
<td>10</td>
<td>Review</td>
<td>Activities from each of the 9 weeks of instruction were reviewed. Focus was directed toward phoneme segmentation and blending activities.</td>
</tr>
</tbody>
</table>

Note. Linking speech to print: All activities required a demonstration of how the PA task related to print. For example, during or after initial sound bingo, the children were asked to select three pictures from the bingo board, articulate the first sound they heard, and then write the letter for that sound.
Carson, Gillon, & Boustead, 2013

• Important implications:
  • Phonics instruction by itself is not enough for many kids (20%)
  • A little goes a long way (10 weeks)
  • Activities can be simple (e.g., bingo) and repeated often with different linguistic units (rhyme, initial phonemes)
  • Most instruction should focus on phonemes
  • Phonemic awareness instruction can be combined with phonics instruction at the highest levels
Michigan ELA Standards

Kindergarten & First Grade
Demonstrate understanding of spoken words, syllables, and sounds (phoneme).

Kindergarten
a. Recognize and produce rhyming words.
b. Count, pronounce, blend, and segment syllables in spoken words.
c. Blend and segment onsets and rimes of single-syllable spoken words.
d. Isolate and pronounce the initial, medial vowel, and final sounds (phonemes) in three-phoneme (consonant-vowel-consonant, or CVC) words.* (This does not include CVCs ending with /l/, /r/, or /x/.)
e. Add or substitute individual sounds (phonemes) in simple, one-syllable words to make new words.

First Grade
a. Distinguish long from short vowel sounds in spoken single-syllable words.
b. Orally produce single-syllable words by blending sounds (phonemes), including consonant blends.
c. Isolate and pronounce initial, medial vowel, and final sounds (phonemes) in spoken single-syllable words.
d. Segment spoken single-syllable words into their complete sequence of individual sounds (phonemes).

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This instruction is more important for some children than others!

- Strang and Piasta (2015) studied the alphabet knowledge & phonological awareness of 57 children in a single, high-quality preschool
  - Children of lower SES had significantly lower levels of AK & PA at the beginning of the school year
  - Showed the same rate of growth throughout the year
  - Were still significantly behind at the end of the year
What does this instruction look like?
Phonological Awareness Skills

- Matching
- Isolation
- Blending
- Segmentation
- Deletion/Substitution

Yopp & Yopp, 2000

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Phonological Awareness Activities

Matching
Matching

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Phonological Awareness Skills

Isolation
Isolation
Phonological Awareness Skills

Blending
Blending

1. /hhh/
2. /ã ā ā/ 
3. /t/
Phonological Awareness Skills

Segmentation
Segmentation

Phoneme Segmentation

sh  ar  k
Phonological Awareness Skills

Deletion/substitution

- t + p =

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Substitution/Deletion

[Image of a worksheet titled "Change a Letter - Card 1 (Phoneme Substitution)" with a grid of squares for writing letters and illustrations of a bug, a bag, and a hat to indicate phonemes.]
Combined PA and phonics instruction
Thank you!

- Questions? Comments? Interested in research-PD partnerships?
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