

Understanding the How and Why of Sound Walls

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Objectives

- Explain the basics of the science behind brain research and how we learn to read
- Understand Ehri's phases of reading development
- Identify the articulatory features of the speech sounds in English
- Recognize why Spanish speakers may have difficulties when learning English and developing phonemic awareness

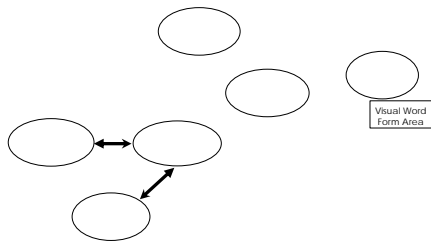


Objectives

- Evaluate common teaching practices from a speech to print perspective to identify short-comings and ways to improve
- Reorganize word walls and arrange sound walls according to phoneme production

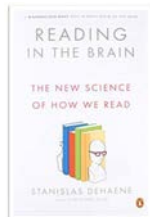
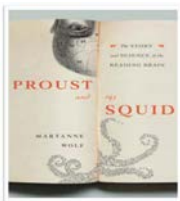


How Does All of This Fit Together In the Reading Process?



Connectionist Model

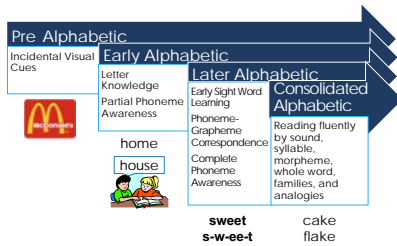
Maryanne Wolf Stanislas Dehaene



We were never born to read!



Ehri's Phases of Word Reading



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Pre-Alphabetic

- Prior to alphabetic understanding
- Not phonemically aware
- Makes associations between the most salient visual features



- May learn by meaning cues in context



"It says walk!"

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Early Alphabetic

- Learns **letter shapes**, letter names and **sounds in names**
- Has **some awareness** of sounds in words
- Can **guess words** from partial letters or context
- Easily confuses similarly spelled words
stick slack string
- Representation of first and last letters of a word is common in spelling - BP = bump; KR = car; YL=will

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Early Alphabetic

- No ability to sound out and blend words
- Sight word reading must involve remembering the letters in the words; these are distinctive features that make one word different from another.



Letter Knowledge

- Teaching the features of letters
- Embedded mnemonics
- Moving to graphemes



Later Alphabetic Phase

- Major grapheme-phoneme correspondences
 - The GLUE
- Ability to segment phonemes
- Phoneme – grapheme mapping
 - Connect spellings to pronunciations and meanings in memory
 - Graphemes are fully bonded to phonemes
- Decoding skill increases along with ability to read unfamiliar words
 - Self teaching to retain sight words in memory



Consolidated Alphabetic Phase

- Growth in knowledge of writing system
 - Recurring letter patterns become utilized
 - Example: -ock in clock, dock, chock, sock
 - -ing, -ed, -est, re-, un-, -tion
- Forming connections to store sight words in memory
 - Segment spelling into graphemes
 - Segment pronunciations into corresponding syllables or morphemes
 - Form connections to retain the word in memory
 - Example: IN TER EST TING



Ways to Read Words

- By Decoding:
 - blend grapheme-phonemes to form word
 - blend larger spelling units to form word
- By Analogy: adapt known word to read unknown word
n ight → br ight d og → fr og
- By Prediction: use of context and partial letters
 - At the hospital, the doctors and n.....
- From Memory/By Sight: retrieve bonded spelling pronunciation meaning from memory
 - dog = " dog"



Consequence of Orthographic Mapping

- Moving from know to unknown
 - Stranger to friend to BFF?
- Seeing a known word (BFF) you recognize instantly
- Looking for a person in a crowd based on specific characteristics (tall, thin, glasses, bald). This person initially takes more time to identify



What Is a Sound Wall?

- A sound wall is set up according to the articulation of speech sounds.
- Moving from the front of your mouth to the back of the throat
- Approaching things from a learner viewpoint rather than a teacher viewpoint
- Anchor to teach letter – sound knowledge and articulatory gestures
- Attaching phonemes to orthographic patterns
 - This has everything to do with print



Why a Sound Wall?

- Two purposes with a broader application:
 1. Attending to articulation
 - Articulatory gestures help to concretize phonemes
 2. Attending to the various graphemes and patterns representing phonemes
 - Providing access to and discussion around the various ways we spell words (orthography)



Why Use a Sound Wall Along with Articulation Pictures?

- Phonemic Awareness Instruction: Contribution of Articulatory Segmentation to Novice Beginners' Reading and Spelling
 - Castiglioni-Spalten & Ehri, 2003
- Contribution of Phonemic Segmentation Instruction With Letters and Articulation Pictures to Word Reading and Spelling in Beginners
 - Boyer & Ehri, 2011
- Orthographic Mapping in the Acquisition of Sight Word Reading, Spelling Memory, and Vocabulary Learning
 - Ehri, 2014



Focus on Phonemes and Articulation

- Hearing sounds in words – “ear”
- Articulatory gestures – “mouth movements”
 - Ease of processing favors gestures
- Sounds are ephemeral and disappear as soon as they are heard
 - Liberman (1999) suggests articulatory gestures rather than acoustic features represent phonemes in the brain.
- Mouth positions are tangible and can be felt, viewed in a mirror, and analyzed by learners
 - (Ehri, 2014)



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Sound Walls: How To Begin

1. Begin with sounds by teaching the articulation of phonemes.
 - If you currently use a word wall, you are going to have to add more graphemes to match phonemes (44 phonemes)
2. Build a sound wall as you teach the phonemes, and add the graphemes as they are introduced.
 - If you teach kindergarten, start with common consonants and short vowels.
3. If you have already introduced graphemes, add the mouth pictures, and review the articulation of each phoneme daily. The key is repetition!
 - Discuss the sound each grapheme represents. Use mirrors and pictures to help make connections and build memory traces.

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Consonant Phonemes

Where and how we use our mouths.

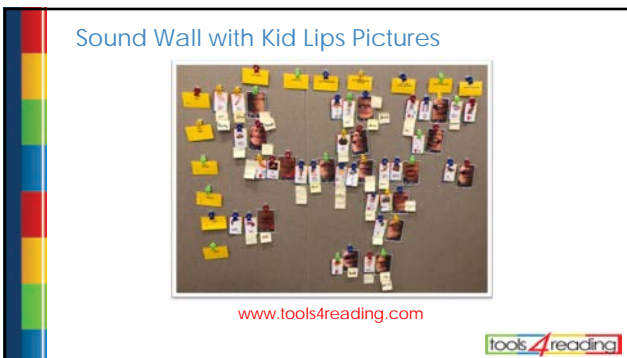
	Labial (lip)	Dental (teeth)	Alveolar (ridge)	Palatal (hard palate)	Velar (soft palate)	Glottal (vocal folds)
Stop						
Continuant						
Friction						
Approximant						
Other						
Liquids						

What we do with our breath and our vocal cords.

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Building a Sound Wall

- Understanding Placement and Manner of Articulation



Sound Walls: How to Begin

- Revisit words already posted on a word wall and analyze them by initial sound.
 - Consider moving words if the phoneme match is inaccurate. For example, move "the" to the voiced /th/
 - Discuss specific patterns (graphemes) that are used to represent our phonemes and focus on the spellings (orthography) along with sounds (phonemes).
- Keep your alphabet strips in place above your board or other area in your room. Do not be confused by thinking only alphabetical order here.



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Thinking About How Sounds are Produced

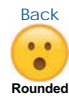
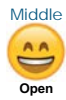
- CONSONANTS
- Labels for the airflow and voicing
 - Stop - Unvoiced or Voiced
 - Nasal - Voiced
 - Fricative - Unvoiced or Voiced
 - Affricate - Unvoiced or Voiced
 - Glides - Unvoiced or Voiced
 - Liquids - Voiced

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How We Produce Vowel Phonemes

■ VOWELS

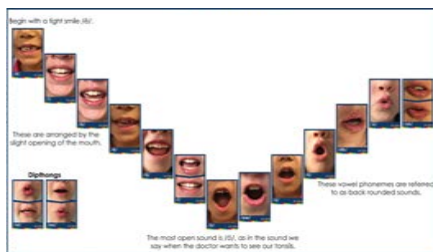
- Labels for place and what we do with our mouth



- Where in the mouth is the sound being produced?
- Is the tongue high, low, pulled back?



Vowel Phonemes Chart



Spanish Vowel Phonemes

- Labels for place and what we do with our mouth

- Where in the mouth is the sound being produced?
Front Middle Back

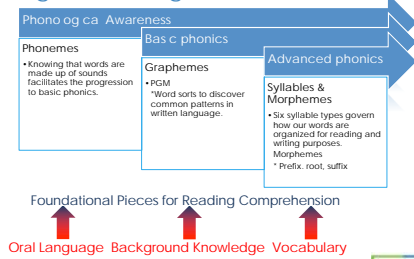
- Vowels

- Spanish Vowel Phonemes and <Graphemes>

/ɔ/ = a /ē/ = e /ē/ = i /ō/ = a /ū/ = u



A continuum of language in relation to reading and writing



It's Not Rote "Visual Memory"

- Methods that emphasize language structure are more effective than rote methods (Graham, 1999; Berninger, 1999)
- Joshi, Treiman, Carreker, & Moats (2009) American Educator

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Phoneme/Grapheme Instructional Cards

- Teach one concept at a time explicitly
- Remember, each card represents a phoneme
- Add the grapheme to the sound wall
- Cover up the graphemes that have not been taught
- Use these to support an existing phonics program
- Practice through application of specific grapheme linking to the phoneme every time you work with it.
 - Phoneme Grapheme Mapping
 - Building Words (specific phoneme/grapheme focus)
 - Sorting Words

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Teacher Knowledge

- Be smarter than your program
- Understand how the language works
- Understand the written system
- Understand the phonological system
- Use assessments to combine these elements into good daily instruction to be more effective and efficient.



Focus on Phonemes and Graphemes


- Phoneme /n/
- Grapheme kn, n
- Connect to Meaning



Conclusion

- Skills become integrated as acquisition proceeds.
- Phonemic awareness and orthography are used to build vocabulary and lexical quality
- The orthographic mapping processes underlie the emergence of students' skill in reading words accurately and automatically from memory.






Thank You!

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References

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