Development and prediction of context-dependent vowel pronunciation in elementary readers

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pint
mint
bead
head

Where letters occur in a word and what letters are adjacent to these letters influence children's pronunciations. For instance, as children learn to read words with the vowel grapheme ea (e.g., head and beam) they will become sensitive to the fact that the final consonant influences the vowel pronunciation such that "ea" is more likely to be pronounced as /ɛ/ (rhyming with head) when it occurs before d than when it occurs before other consonant letters.

Building off of Treiman's vowel pronunciation work, Steacy and her colleagues examined child- and nonword-factors that contribute to children's assignment of these "context-dependent" vowel pronunciations. Two models were created to study this.
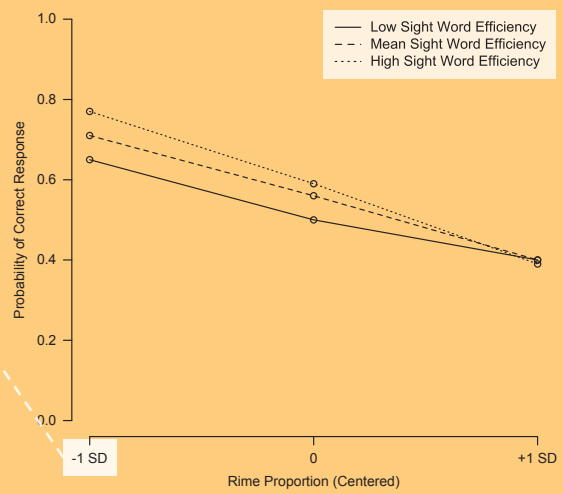
Results

Interaction between rime ratio and word reading using higher and lower frequency, rime influenced, vowel grapheme–phoneme correspondences scoring schemes. The graphs show that the probability of a child using the lower frequency vowel pronunciation when pronouncing nonwords with a variable vowel increases as the child's reading skill improves and the ratio of rime units found in the English language that support the lower frequency vowel pronunciation increases.
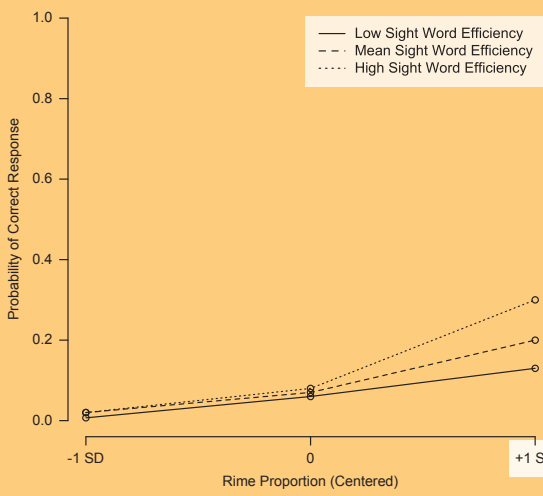
## High Frequency Grapheme-Phoneme Correspondence Rime Supported

High Frequency Grapheme-Phoneme Correspondence

hint
mint
print
skint

Low Frequency Grapheme-Phoneme Correspondence

pint

sint
ratio=1/5
=.20
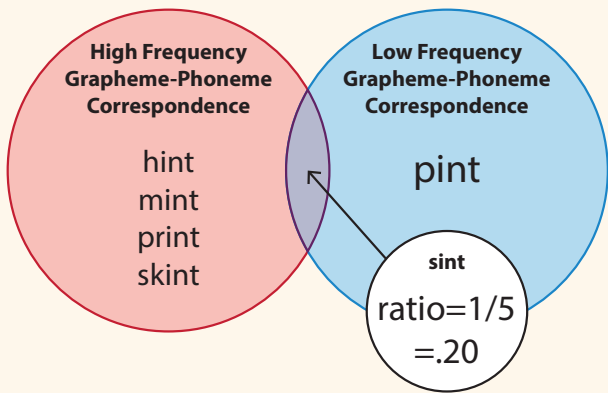
Coding for Correct Responses Using the High Frequency GPC

Low Sight Word Efficiency
Mean Sight Word Efficiency
High Sight Word Efficiency

Coding for Correct Responses Using the Low Frequency GPC

Low Sight Word Efficiency
Mean Sight Word Efficiency
High Sight Word Efficiency

Low Frequency Grapheme-Phoneme Correspondence Rime Supported

High Frequency Grapheme-Phoneme Correspondence

spook

Low Frequency Grapheme-Phoneme Correspondence

book   look
cook   nook
crook   shook
hook   took

drook
ratio=8/9
=.89
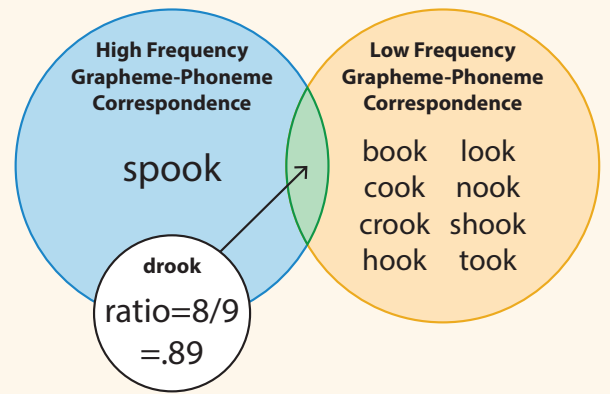
What this tells us

Children with more reading experience or exposure are more likely to pick up on the context of vowel pronunciations in words with variable vowels. Further work is needed to understand how to facilitate vowel flexibility and sensitivity to contextual clues through reading instruction.

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