

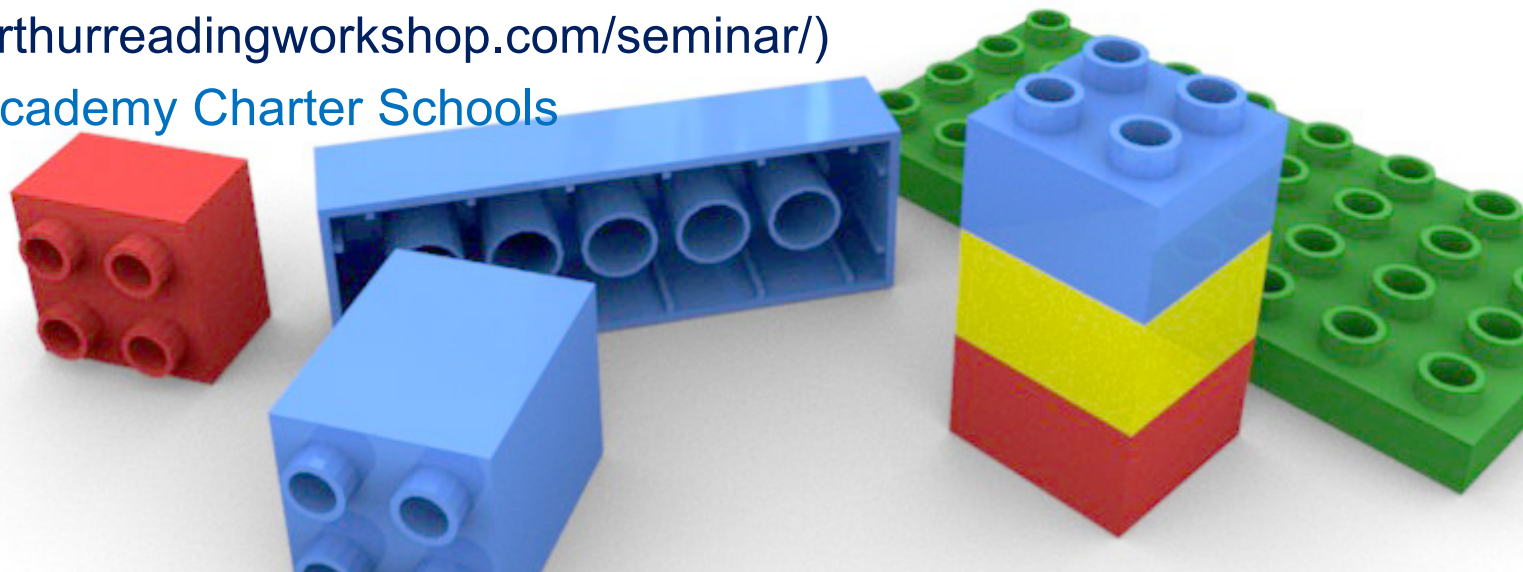
Speech and Reading

With Two Kinds of Language Codes

1. The Auditory Code for Speech
2. The Printed Code for Reading and Spelling

Charles Arthur, (arthurreadingworkshop.com/seminar/)

Founder, Arthur Academy Charter Schools



A quote on the relationship of speech to reading.

*“I could not but be infected... or avoid being persuaded by (Isabelle and others) that my interest in speech was related to their interest in reading. After all, they appreciated early on that the connection between speech and reading is a two-way street and that one is well advised to look in both directions before proceeding. Thus, looking first toward speech, they observed in the work of their colleagues at Haskins Laboratories that the alphabetic structure of words is not to be found at the surface of the acoustic signal but only at a deeper, less accessible level. Then, looking in the other direction, toward reading, they foresaw the fateful consequence – namely, that mastery of speech does not normally make a child aware that words do, in fact, have an alphabetic structure. ... I promote the notion that only the right theory of speech can provide insight into the process by which a child who speaks is converted to one who also reads and writes. Seeing that process, as it is thus illuminated, **should help the teacher to understand** the relation between what her would-be reader already does and what more the teacher must now teach her to do.”*

Alvin M. Liberman, **The Reading Researcher and the Reading Teacher Need the Right Theory of Speech**. *Scientific Studies of Reading*, 1999

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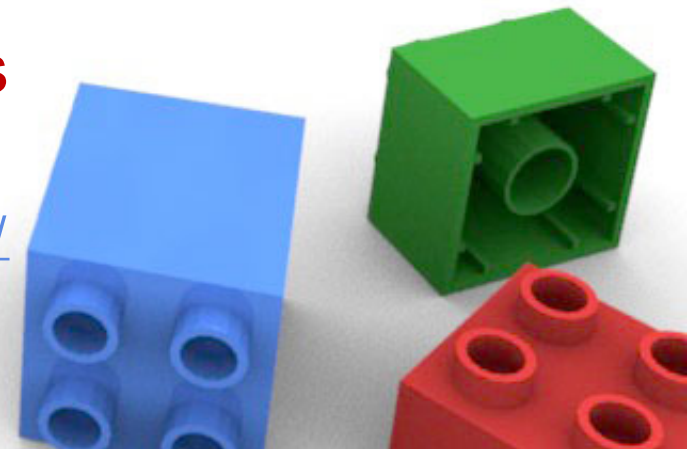


The Auditory Code for Speech 2.

- The Auditory Code, for every language, is made up of small units, called phonemes.
- Each language is made up of a unique number of unique phonemes that form thousands of words.
- The Code is part of the human social evolution that enables cooperation within and between groups.
- It only evolved once in the first language, over thousands of years in Africa.
- From the original, other languages evolved over time in other regions.
- The original language had as many as 100 phonemes.

<http://arthurreadingworkshop.com/wp-content/uploads/2019/02/SORW-Part1a-SeekingBuildingTheory.pdf>

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Phonemes

3.

- There are only two kinds of phonemes: consonants and vowels.
- English words are made up of a combination of consonants and vowels from only 43-44 phonemes.
- Other languages have more or less phonemes.
- For a variety of reasons, the phonemic pattern, or structure, of words was hard to discover, but was necessary in developing an alphabetic print.
- Consonants came first in discovery.
- Illiterate children and adults, or educated adults in a non- alphabetic written language, don't know about phonemes in their language.

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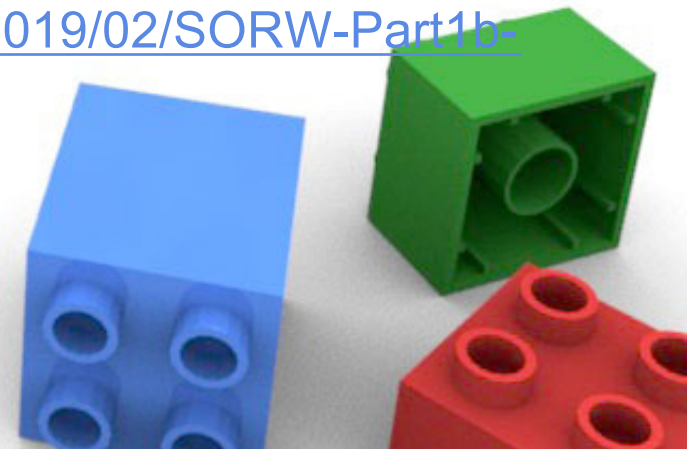
English Phonemes

4.

- The 43-44 English phonemes in words make up their unique phonemic structure.
- Until the invention of a written alphabet, people were largely unaware of these phonemes and their structure.
- They lived in an oral society. The phonemes were hidden. They only knew about whole words.

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Speaking and Listening

5.

- The phonemic structure of words is automatically managed for listening and speaking.
- Our brain has evolved a special phonological module that performs both actions for us.
- We hear and understand spoken words by decoding their pattern of phonemes, automatically.
- We speak words by encoding the phonemes into spoken words, automatically.
- We merely need to think of a word.
- Without knowing, we do this fast to make speech useful.

<http://arthurreadingworkshop.com/wp-content/uploads/2019/02/SORW-Part2-BrainImaging.pdf>

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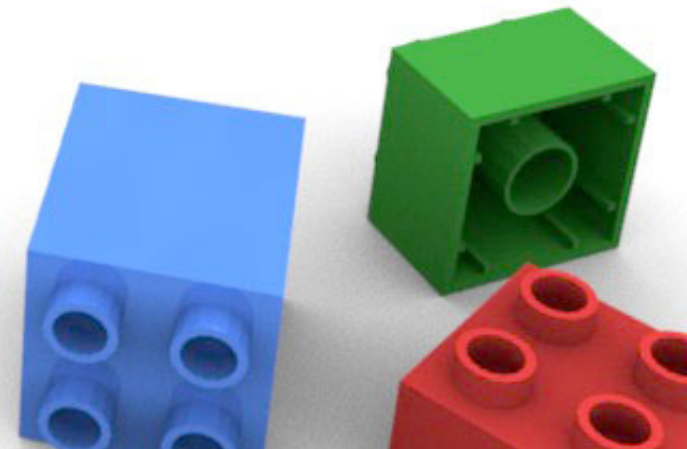
The Printed Code

6.

- The written code for English is made of of 26 letters.
- They represent all the combinations of the 43-44 phonemes in English words.
- The first written alphabetic language developed in the Mediterranean region, 4000 years ago.
- It took about 1000 years before it was used to record documents, stories and records.

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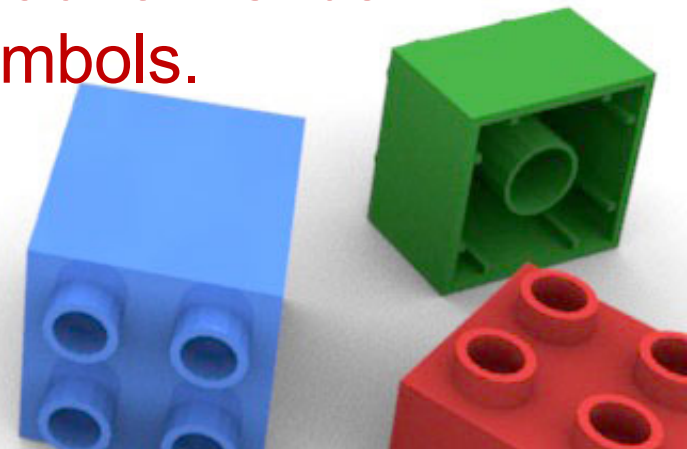


Letters

7.

- The combination, or pattern, of letters in words make up their printed structure.
- The printed structure approximately represents the phonemic structure of spoken words as closely as possible.
- Because the auditory code is largely “hidden” in speech, the exact match with letters is difficult to make.
- The phonemes, and their structure, had to first be discovered before assigning letter symbols.

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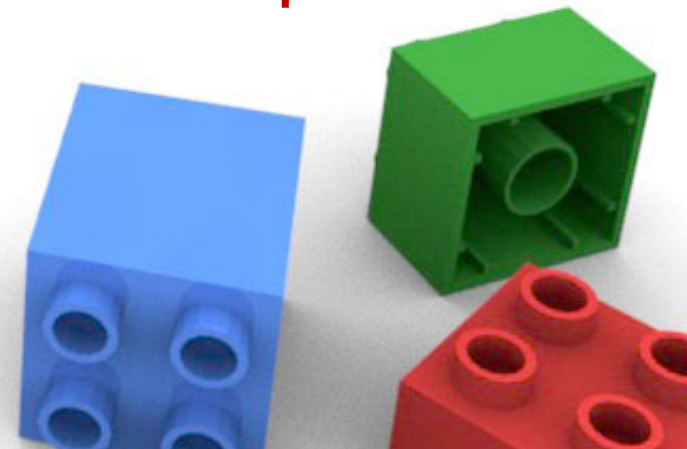


Reading and Spelling

8.

- We read and understand printed words by decoding their pattern of letters into their phonemic pattern to form spoken words.
- We spell by encoding a spoken word's phonemic pattern, into printed words.
- Neither reading or spelling is natural.
- They must be learned because the written code was invented, not evolved in nature like speech.

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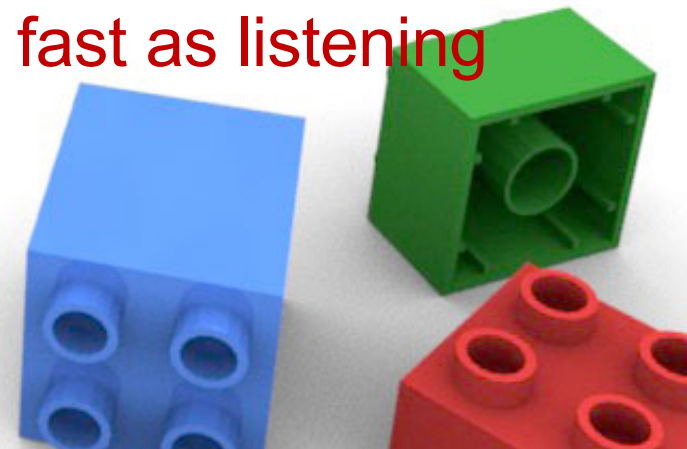


Learning to decode

9.

- Decoding requires changing the printed code of a word into its phonemic code.
- For reading to be useful, it must be performed almost as well as speech.
- The alphabet's links to the phonemic code, makes this possible.
- This linkage must be learned very firmly in order to read.
- If learned, our brain uses the same “phonological module” for speech to decode print, as fast as listening to speech.

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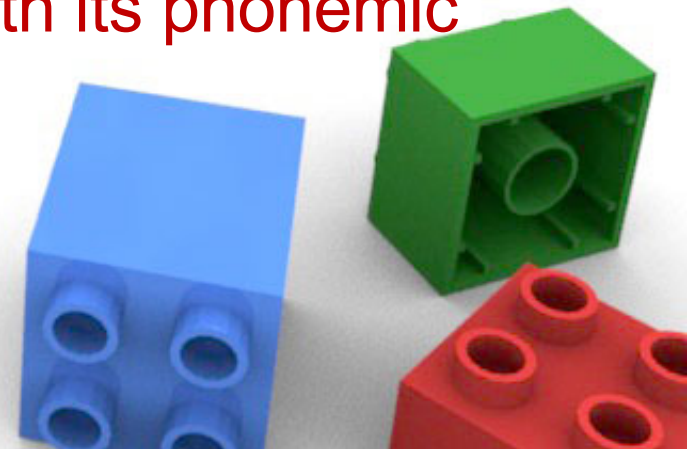


The Phonemic Linkage

10.

- Just as the phonemic structure of spoken words had to be discovered before a written alphabet could be discovered and invented, ...
- ...new readers must learn the phonemes and their structure in spoken words....
- ...so that the invented written alphabet can be learned,
- ..and the letters and phonemes can be linked,
- ..enabling the brain to do its thing with its phonemic module.

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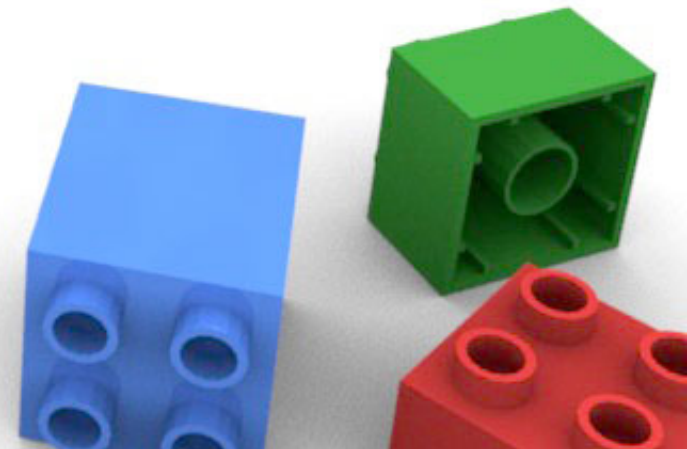
Difficulties with the Phonemes

11.

- There are aspects of the phonemic structure that make an exact representation impossible.
- Phonemes are spoken in spirits, Letters are written in order, on a line.
- This creates problems, i.e.barriers, in learning how to read.
- At first, the visual image doesn't match what is heard.
- In addition, English also has its own peculiarities.

See Bibliographies slides 18-22

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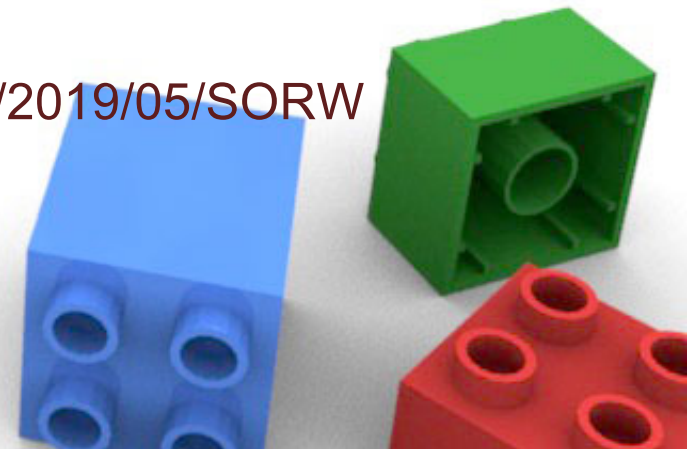


Teaching Beginning Reading^{12.}

- If these difficulties are eliminated through teaching, reading can use the same part of the brain used for speech. (the phonological module)
- Decoding words can become as automatic as speech, enabling fluency.
- **HOWEVER**, if beginning reading by-passes the alphabetic code and uses visual memory, a different part of the brain will be used.
- This creates less efficiency and limits reading vocabulary.

<http://arthurreadingworkshop.com/wp-content/uploads/2019/05/SORW-Part3a-InstructionalImplications-1.pdf>

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So, Why Teach Phonics?

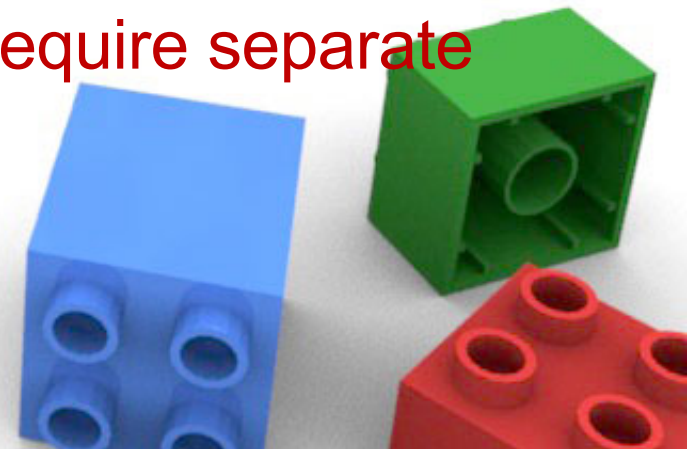
13.

- First: teaching phonics works in comparison to not teaching phonics. “It’s helpful for all children, harmful for none, and crucial for some.” C. Snow & C. Juel. 2010
- Second: because of the evolution of speech, humans are neurologically built to read phonetically. (even if not taught)
- It is the alphabet that makes this linkage to the phonological module, possible.
- Teaching the alphabetic link from the very beginning makes the best sense so that children do not have to learn two ways of reading words that require separate areas of the brain.

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Part 3b Instruction Implications

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Built-in Difficulties in Learning

14.

- Beyond the typical matching difficulties between phonemes and print,
- Not derived from vision or comprehension,
- Not disfunction or disability,
- But variability derived from the function of the phonological module in learning decoding skills.
- Function of the module varies among readers in managing the added burden of decoding.
- This variation is distributed along the normal curve, like many other human talents.

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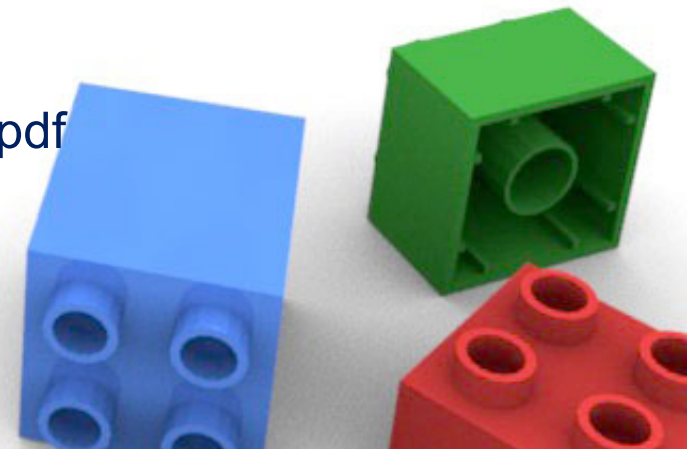
Dyslexia

15.

- A weakness, of those at the lower end of the normal curve, causes slowness in learning to decode.
- Additional efforts are needed so that they can strengthen this natural ability.
- If done carefully and smartly, they can catch-up to their peers.
- Especially if done in the early grades, preferably in kindergarten,
- before the condition becomes more prominent, costly and unpleasant to correct.

http://arthurreadingworkshop.com/wp-content/uploads/2018/03/UnderstandingDyslexia_v2-.pdf

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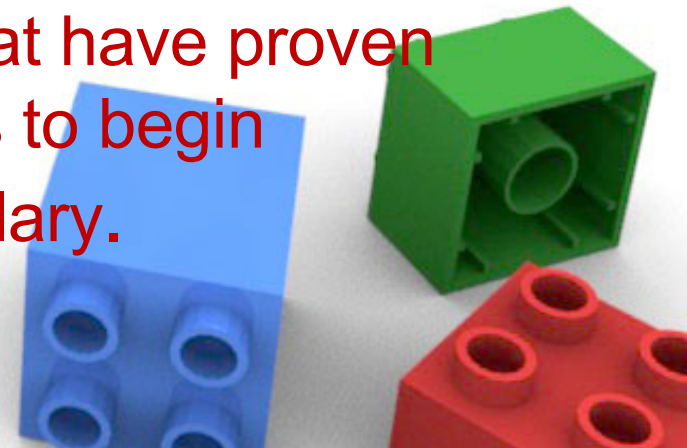


A Teaching Plan

16.

- A plan needs to be put in place that teaches all students as if they were potentially Tier 3 learners, from kindergarten, on.
- This should prevent having any Tier 3 learners and teach all students in a classroom Core program that is appropriate for Tier 1 or 2.
- Tier 2 students would be given added support and instruction, as needed, in the program in grades k-2,
- That is, if the students start in kindergarten.
- Beginning methods should be used that have proven successful in teaching kindergarteners to begin accumulating a varied reading vocabulary.

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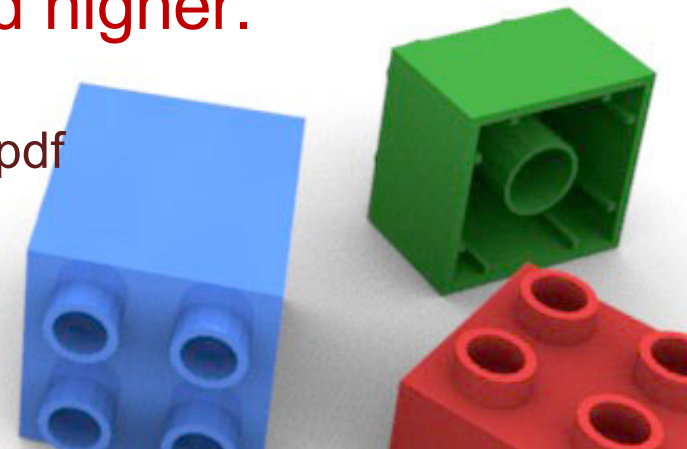
A Core Reading Program

17.

- A Core program needs to provide specialized methods for kindergarteners so all can learn.
- The program needs to include more than readiness skills in kindergarten.
- It should provide a track that teaches decoding skills early in the year in order to begin to accumulate a reading vocabulary of nearly 400 words, with some fluency, as well as a firm foundation of phonemic awareness.
- This would give all new readers a head-start in meeting the rush of new words in grade one and higher.

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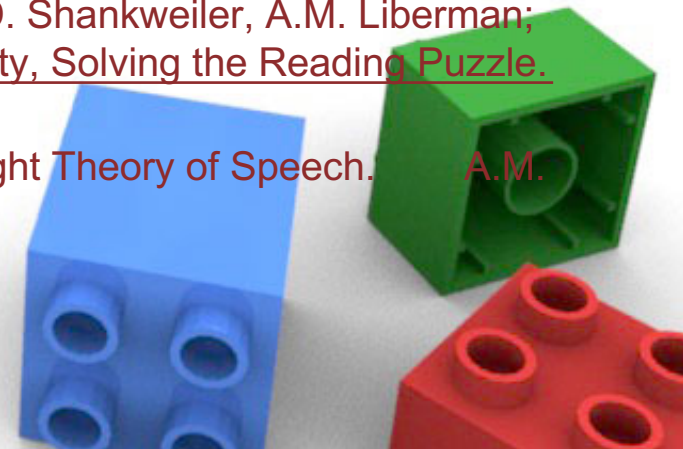
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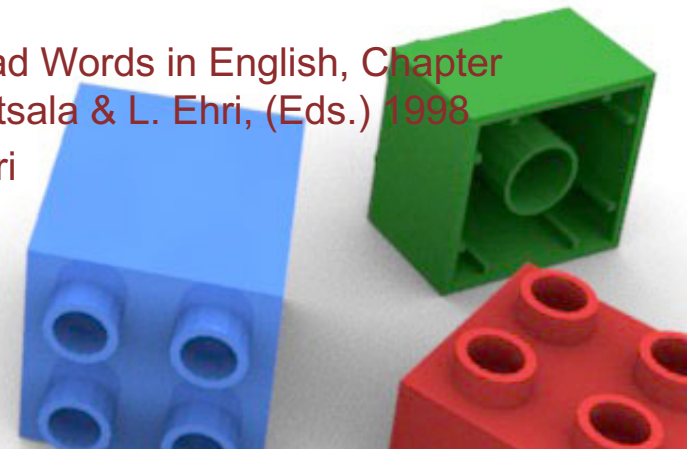
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