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How phonetic is English?

By
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The term “phonics” is frequently used interchangeably with reading instruction, so it’s understandable that many people believe English can be “sounded out.” Ever since alphabets were first invented, alphabetic languages have used letters to represent the sounds in words. The easiest alphabetic languages to learn are those that use one grapheme (a single letter or a letter combination) for each phoneme (the smallest sound unit in a language). As the grapheme/phoneme relationship becomes less direct, learning to read a language becomes more difficult.

The Reading Kingdom Curriculum Guide states that approximately 20% of English words can be “sounded out.” At such a low percentage, sounding-out is functionally useless. But where did this 20% number come from?

The phonetic qualities of English have been studied extensively. Here are some of the findings:

- Dr. Godfrey Dewey, who devoted much of his career to studying our orthographical system, conducted a study in which he created a list of the 10,000 most common printed words out of a sampling of approximately 4,565,000 words. The result of this study, which he published in the book *Relative Frequency of English Speech Sounds* (Harvard University Press) was that approximately 1 in 5 of the most common words in English are spelled phonetically. He also found that for the 41 distinguishable phonemes, there are 561 spellings, the 26 letters of our alphabet are pronounced in 92 ways, and we also have 132 sets of two letters (digraphs such as th, ch, ea, etc.) that have 260 pronunciations.

- Professor Julius Nyikos of Washington and Jefferson College found 1,768 ways of spelling 40 English phonemes – an average of 44 per sound. He published his results in a paper called *A Linguistic Perspective of Functional Illiteracy* published by the Linguistic Association of Canada and the United States. He also found that these 40 English phonemes are spelled with all 26 single letters in the alphabet and at least 153 two-letter graphemes, 98 three-letter graphemes, 14 four-letter grapheme, and 3 five-letter graphemes, for a total of at least 294 different graphemes. (This is less than the 1,768 mentioned above because every phoneme is spelled with more than one grapheme. For instance, the “u” in the word “nut” can be spelled 60 different ways.)

- Professor Theodore Clymer studied phonics rules and published his results in a paper entitled *The utility of phonic generalizations in the primary grades*. Clymer collected 121 commonly used phonics rules. Using 2,600 words found in basal readers and Merriam-Webster’s Dictionary pronunciation guide, he compared the actual pronunciation of each word to the phonics rules that should apply and calculated a percentage of agreement. Eliminating any rules that did not apply to more than 20 words, Clymer whittled his list down to 45. Then, using 75% as a reasonable level of utility, he found that only 18 of the 45 rules had any utility at all. For example, Clymer found that the generalization commonly referred to as “when two vowels go walking” is effective only 45% of the time.

- Robert Hillerich, the Chairman of the Dept. of Reading & Language Arts at the National College of Education did a study on vowels funded by the US Dept. of Health, Education & Welfare. The results were published in a paper entitled *The Truth About Vowels*. His conclusion: "From the evidence and the research studies reviewed, the author concludes that generalizations about vowels can be grouped into two categories: generalizations which hold true most of the time but which include too few words to be worth teaching, and those which apply to many words but which are so unreliable that they are not worth teaching."

- Dr. Diane McGuinness, in her book *Why Our Children Can't Read* explains the complex logic that is required to learn to read English and why that is a serious problem for students. Unlike most other alphabetic languages, there are tens of thousands of different syllables in English, with sixteen different syllable patterns:

CV	CCV	CCCV	CVC	CCVC	CCCVC	CVCC	CVCCC
CCVCC	CCVCCC	CCCVCCC	CCCVCC	VCCC	VCC	VC	V
(C=consonant, V=vowel)							

  There are two or more syllables in most English words. Each syllable can have one of the sixteen syllable patterns and each vowel and consonant in each of these patterns can represent multiple phonemes. Additionally, all 26 letters of the alphabet are silent in some words with no way of knowing whether a letter is silent or not in a word, and all letters except H, Q, U, W, X, and Y are doubled in some words and not in others, with no way of knowing whether a letter is doubled or not. The level of complexity is astounding.

- Dr. Max Colheart and his colleague, Dr. Anne Castles published a comprehensive review of phonological awareness studies in the journal Cognition, titled "Is there a causal link from phonological awareness to success in learning to read?" They concluded that "no study has provided unequivocal evidence that there is a causal link from competence in phonological awareness to success in reading and spelling acquisition."

- Dr. Donald Hammill and Dr. H. Lee Swanson reviewed the National Reading Panel's Meta-Analysis of Phonics Instruction and found that "Instead of phonics approaches being superior to non-phonics approaches, we argue that the advantages of phonics instruction relative to non-phonics instruction have not been demonstrated."

Many phonics advocates claim that English is 50 percent phonetic. Where do they get this percentage?

They get this percentage from a 1966 study conducted by Professor Paul Hanna which was funded by the US Dept. of Health, Education & Welfare. The results were published in a paper entitled *Phoneme-Grapheme Correspondences as Cues to Spelling Improvement*. Hanna studied 17,310 words selected from the Thorndike-Lorge Teacher's Word Book of 30,000 Words (omitting foreign words, trade names, slang, and rare words) and used Merriam-Webster dictionary pronunciation guide to create 203 phonics rules that were put into a computer.

Using these rules, Hanna input whole words and the computer achieved 49% spelling accuracy. This is where the 50% figure comes from. However, citing this result to claim English is 50% phonetic is

ridiculous for multiple reasons: 1) Hanna reached this number by allowing more than one grapheme per phoneme. If you allow only one grapheme per phoneme, English is only 20% phonetic. 2) Children are not computers and cannot memorize 203 rules. 3) Even if half the words were phonetic, children would still have no way of knowing which word is spelled phonetically and which is not. Imagine teaching arithmetic and telling children that 2+2=4 fifty percent of the time.

So why do phonics proponents continue using a system that does not work? As renowned psychologist Abraham Maslow noted "When all you have is a hammer, everything looks like a nail." In other words, phonics advocates, for many seemingly valid reasons, continue to try and use the only tool they're aware of.

English has evolved over the course of millennia, without any central planning. Words from Germanic Anglo-Saxon (woman, Wednesday) and Old Norse (thrust, give) were mixed with words from the Latin (annual, bishop), and Norman French (beef, war). Science, technology and the Enlightenment added words, often based on Greek (anthropology, phone, school), and wars and globalization added even more, like "verandah" from Hindi and "tomato" from Nahuatl (Aztec) via Spanish. Words from other languages typically carry their spelling patterns into English. So, for example, the spelling "ch" represents different sounds in words drawn from Germanic (cheap, rich, such), Greek (chemist, anchor, echo) and French (chef, brochure, parachute).

Various intrepid people throughout history have attempted to reform English spelling, including Theodore Roosevelt, Charles Darwin, George Bernard Shaw, Andrew Carnegie, Isaac Asimov and the Duke of Edinburgh. But they all failed and we are still faced with the simple fact that there is simply no way to reliably "sound-out" or spell English.

As long as phonics-focused reading instruction is used to teach children how to decode English, a high failure rate is guaranteed because English is just not a phonetic language. We represent the challenges students face with phonics via this one sentence where the "ea" vowel combination can be pronounced 13 different ways:

> I knew in my h**ea**d and h**ea**rt that the th**ea**ter bur**ea**u's harsh r**ea**ction to the gr**ea**t and b**ea**utiful Oc**ea**n/**Ea**rth pag**ea**nt was m**ea**n spirited – despite the cav**ea**t that their review was chang**ea**ble.

Put simply, if phonics worked as it should, the word would be spelled "foniks."