



Teaching and Learning Spelling

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ABSTRACT—*Learning to spell is important for writing and reading, but how spelling should be taught is a controversial topic. Although children learn about spelling to some extent as they encounter words while reading, this is not usually enough to make them good spellers. Children need systematic spelling instruction to learn how the writing system works and not just memorize how words are spelled. Phonics instruction is more effective than some other instructional approaches, but teaching phonics presents a simplified and in some ways inaccurate picture of English and some other writing systems. Studying words and the patterns they follow is more effective. To use such methods well, teachers need more opportunities to learn about writing systems and the development of spelling.*

KEYWORDS—reading; spelling; writing

Spelling and how to teach spelling are controversial topics. Should we encourage children to invent spellings for words, trusting that they will eventually learn the correct spellings from exposure to those words while reading? Or do children need instruction in how to spell? If so, what kind of instruction is best? In this article, I discuss what children need to learn about spelling, the extent to which they learn to spell through reading, and how systematic instruction can help.

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WHAT DO CHILDREN NEED TO LEARN ABOUT SPELLING?

Learning to write well is an important goal of education. Writing allows us to record our ideas, share them with others, and search for information accurately (e.g., when using the World Wide Web). Writing also allows us to overcome a major limit of spoken language: that it normally fades quickly. Ideas that are represented visually are more broadly accessible.

Writing is important, but how important is it to spell words correctly? A child who types *walris* into a search engine will probably find information about walruses, so do children need to learn to spell correctly? Learning correct spelling is important for several reasons: First, misspellings can cause errors and difficulties in comprehension. Second, readers may develop negative impressions of a writer's arguments if his prose contains misspelled words (1). And finally, learning conventional spellings of words allows people to read the words more quickly (2) and concentrate on ideas rather than spelling.

To be a good speller, it is not enough to know how to spell the words in one's spoken vocabulary. Children's vocabulary increases as they get older and people of all ages must sometimes write words they have not heard. To spell well, a child must know how the writing system works. This allows the child to produce correct or at least reasonable spellings for both familiar words and novel words. Writing systems can be complex, so learning how they work can be a long process.

DO CHILDREN BECOME PROFICIENT SPELLERS BY READING?

If children became proficient spellers purely though reading, then teaching spelling formally would be unnecessary. Teachers could encourage children to invent their own spellings for words and not correct their errors, trusting that children would eventually learn conventional spellings from exposure to them while reading. Some educators have argued for such an approach. Indeed, the assumption that spelling (and reading) develop naturally when children are immersed in a literacy-rich environment (3) played a major role in literacy instruction in the United

States in the late 1980s and 1990s. This approach—the *whole-language perspective*—is still used in some places in the United States, as well as in some other countries (e.g., New Zealand). According to this perspective, lessons that present words isolation are unnecessary and even harmful because they remove words from a meaningful context.

Children's spelling of words improves when they read words in texts (4). However, the gains are modest, as anyone who has read a word like *necessary* many times but has trouble spelling it can attest. As a result, children who receive systematic spelling instruction generally spell more successfully than those who do not (5).

Reading as a way to improve spelling is limited for several reasons. First, as people read, they typically attend to the meaning of a passage, not to the spelling of words. Second, people can sometimes identify words in reading without processing all the letters; this may be especially true for weak spellers (6). For example, a child might recognize *crocodile* in a book about reptiles without noticing whether *o* or *a* is the vowel in the word's second syllable. Spelling instruction encourages close attention to written words, including all the letters. Third, the way sounds are linked to spelling is generally more complex and variable than the how spelling is linked to sound. Take Spanish, which is considered a regular writing system in that almost all its letters can be pronounced only one way. The letter *c* is pronounced as *s*, so a child who knows this rule should be able to pronounce *cerrar* (to close); however, the *s* sound is spelled with *c* in some words (*cerrar*) and *s* in others (*serrar* [to saw]), so it is harder for a speller to know which letter to use. Therefore, in Spanish and other writing systems, spelling is intrinsically more difficult than reading.

HOW SHOULD SPELLING BE TAUGHT?

Approaches to Instruction

Spelling instruction in schools often involves asking children to memorize a list of words for a test. The words may be chosen because they are relevant to a theme (e.g., a holiday) or because they appear frequently in children's reading materials. The words may not be chosen to illustrate a particular spelling pattern. Children are often told to study the spellings by looking at them, closing their eyes and visualizing them, and then writing the words and checking whether they did so correctly. These activities may help children memorize the spellings of specific words but they do little to help children learn how the writing system works. Thus, although teachers in the United States commonly report using traditional memorization-based approaches to teach spelling, they express dissatisfaction with the results (7).

Phonics instruction can help teach children about how an alphabetic writing system works. This type of instruction assumes that these writing systems are based on how letters or groups of letters (e.g., *sh*) correspond with *phonemes* (individual

units of sound such as the *t* sound in *top* or the *sh* sound in *shop*). Phonics teaches that each letter has a sound and that the letter should be used whenever the sound is heard. Teachers who use phonics usually teach some broader rules in addition to letter-sound correspondences. For example, learners of English may be taught that a final *e* makes the preceding vowel “say its name,” as in *gave*. They may be taught the rabbit rule—that a single consonant phoneme after a stressed vowel in a two-syllable word is spelled with a double consonant if the vowel is short, as in *rabbit*, and with a single consonant if the vowel is long, as in *tiger*. Phonics encourages the idea that words can be divided into those that follow the sound-letter correspondences that are taught, including *pot*, *gave*, and *rabbit*, and words that do not, such as *swan*, *have*, and *comic*. It suggests that words in the latter category, which are sometimes called *exception words*, must be memorized by rote.

Phonics instruction improves spelling in typically developing kindergartners and first graders, and in older children who read and spell with difficulty, and is more effective than the whole-language approach (8, 9). However, phonics instruction is limited. As mentioned earlier, virtually every alphabetic writing system includes some phonemes that have more than one possible spelling (e.g., the aforementioned Spanish *s*, many examples in English). In several of these cases, certain factors explain why some words that have one spelling and other words have another. Children would be more likely to select the correct spelling if they considered the relevant factors than if they chose randomly, but phonics instruction typically does not teach them how to do so.

In some cases, children would be more likely to spell a phoneme correctly if they considered the neighboring phonemes (the *phonological context*). For example, many English words with the *a* spelling of the short *o* sound instead of the more typical *o* (e.g., *swan*, *wad*) also feature a *w* before the vowel (10). In other cases, the phoneme that follows the one the child is spelling provides informative context. For example, the short *e* sound is more likely to be spelled as *ea* before *d* (as in *head* and *instead*) than before *p*. In English, being aware of phonological context does not usually guarantee correct spelling. For example, although *ea* spellings of the short *e* are more common before *d* than before other consonants, they do not appear in all words with *d*. Even though spellers could not achieve perfection by considering neighboring phonemes, they could improve their performance. However, the patterns that could help them are not usually taught in phonics instruction.

In other cases, apparent inconsistencies in spelling are motivated by *graphotactic* patterns, those pertaining to the order and organization of letters in words. For example, *have* and *give* are exceptions to the phonics rule that a final *e* makes a vowel letter say its name. However, in English, words rarely end with a single *v*. When a word would otherwise end with this letter, an *e* is typically added. Children could use this graphotactic pattern to determine that *have* and *give* should be spelled with a final *e*.

However, potentially helpful graphotactic patterns such as this are not taught in phonics instruction.

A final example of a pattern that is overlooked in phonics instruction is the lack of consonant doubling in words like *comic* and *valid*. According to the rabbit rule, these words should have a double middle consonant because the vowel of the first syllable is short. However, words with certain endings, including *ic* and *id*, usually have a single consonant rather than a double consonant after a short vowel. The spellings deviate from the rabbit rule, but do so systematically (11). Phonics instruction does not alert children to the role of the ending spelling in choosing between single and double consonant letters, meaning that it does not provide a full picture of how the writing system works.

Some of the workings of English and other writing systems, such as French, reflect the meaning units (*morphemes*) in words (their *morphology*). For example, the sequence *et* can be spelled several ways in French. However, it is always spelled *ette* if it is a diminutive morpheme that expresses smallness or affection (e.g., *fillette* [little girl]). In English, a final *ik* may be a morpheme meaning of or pertaining to, in which case it is spelled as *ic* rather than *ick* (as in *gimmick*) or in some other way. Another morphological pattern concerns the final *t* in English: When it is a past-tense suffix, it is usually spelled with *ed* (e.g., *jumped*) rather than with *t*. Phonics instruction concentrates on links between phonemes and spellings, and does not adequately teach children about the role of morphology.

For children to understand how the writing system works, studying words can become a content area, like studying animals or arithmetic. Approaches that use a *word study* method (12) assume that children want to know why things are the way they are, in spelling as in other areas. Just as there is a reason a bat is a mammal, even though it flies like a bird, there are reasons why words are spelled as they are. Children can learn about the reasons. For example, teachers and students can discuss why *fell*, *pill*, *Jeff*, and *muff* end with double letters, and *feel*, *pool*, *deaf*, and *roof* do not. Could it be that *f* and *l* double at the end of words after phonologically short vowels? But that predicts *deaff*, not *deaf*. Could it be that double consonants do not occur after two or more vowels? That explains the lack of doubling in *deaf* and in *double*, as well as in *meadow* (11). Making discoveries about words can be exciting for children (13). Doing so for some words with a teacher or parent can encourage children to think about these matters for other words.

Phonics instruction typically lasts only a year or two, but longer instruction can be helpful with a complex writing system such as English. Since English spellings reflect morphology, spelling instruction can be integrated with vocabulary instruction. For example, older elementary school students could learn about the morpheme *cent* and how it always occurs with an initial *c* (e.g., *percent*, *century*), then expand their vocabularies by learning about new words with this root (e.g., *centennial*).

TEACHERS' KNOWLEDGE

Recently, researchers and others have discussed teaching methods like these, and programs that use these methods are beginning to be evaluated (14, 15). For these approaches to succeed, teachers must understand how the writing system works. Adults follow many patterns in spelling without being aware of what they are doing. For example, most adults probably think that *hav* and *deaff* look odd, but have not considered why. In many teacher-preparation programs, participants lack opportunities to learn about writing systems and spelling development (16).

Teachers also need to learn about the errors that children of various ages typically make and why they err. For example, young children sometimes misspell words because their ability to analyze spoken words into phonemes (their *phonemic awareness*) has not developed fully. In studies, phonemic awareness is linked to skill in spelling (and reading; 17) and certain phoneme sequences are especially difficult to analyze. For example, young children may have trouble segmenting initial consonant clusters into phonemes. They may treat a cluster as a unit and spell it with a single letter (e.g., *fip* for *flip*). Such errors occur not only in learners of English but also in learners of languages in which letters are linked more regularly with sounds, especially among children who struggle to learn to spell (18, 19).

When children can analyze words into smaller segments, their analyses sometimes differ from those assumed by their writing system. For example, a North American child may analyze *city* as containing a sound that is more similar to *d* than to *t* and use a *d* to spell it (20). Although this spelling is unconventional, it makes sense given how the second consonant of *city* is pronounced in North American English. It is pronounced as a tap, a sound in which the tongue briefly contacts the roof of the mouth. Because the vocal cords vibrate as this occurs, as they do with *d*, a tap is similar to a *d*. Children may also analyze words like *trim* as beginning with *ch* and spell them accordingly (21). This makes sense given that the first sound of *trim* changes as the speaker anticipates the following *r*, becoming similar to *ch*. Children who are familiar with the names of letters when they start to spell, as U.S. children typically are, may make errors that reflect use of letter names. For example, they may spell *clean* with an *e* rather than an *ea* and *tar* as *tr* rather than *tar* (22, 23). Still other misspellings reflect a lack of understanding of the morphemes within words and how the spellings of morphemes tend to be maintained across the words in which they occur. For example, a child who spells *cheat* with a *t* but who uses a *d* in *cheater* has not retained the spelling of *cheat* when it is embedded in a morphologically complex word and its final consonant becomes a tap.

Adults who understand the reasons for children's errors can monitor children's progress more effectively and respond to their misspellings more helpfully. For example, a teacher could acknowledge that a child who writes *chrime* for *trim* has heard the word and analyzed the sounds within it while pointing out

that, even though the word's first sound is similar to *ch*, it is also similar to *t* and is spelled as such. Or a teacher might remind a child who writes *bider* for *biter* that a biter is someone who bites and that *biter* should have a *t*, as *bite* does. Researchers have begun to address these issues about teachers' knowledge and its possible relations to children's performance (24).

STATISTICAL LEARNING

Although good instruction is helpful in learning to spell, children also pick up some information about spelling without direct instruction. For example, in one study (22), first graders tended to avoid using *ck* at the beginning of words even though they had not been taught that *ck* never appears in this position. The children apparently learned this graphotactic pattern without explicit teaching. Children probably do this using their *statistical learning* skills—their ability to learn patterns without direct teaching or corrective feedback (25). Although implicitly learning simple graphotactic patterns can occur relatively quickly, as in the previous example, implicitly learning phonological patterns, especially those in which the choice among spellings of a sound depends on nearby phonemes, can take much longer (26). Direct instruction can speed the process.

CONCLUSIONS

How children should learn to spell is controversial. In this article, I have argued that the goal of spelling instruction is for children to understand how their writing system works. Children learn about some aspects of spelling on their own, including from exposure to written words while reading, but reading experience is insufficient for children to spell proficiently. The traditional instructional method—having children look at spellings, visualize them mentally, and try to reproduce them—does little to help them understand the workings of the writing system. Phonics instruction goes some way toward this goal, but more comprehensive instruction is needed to present a full picture.

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