Spelling

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There has been less research on how children learn to spell than on how they learn to read. Research on spelling development is important, however, because it can provide insights into processes underlying the learning and use of written words. Moreover, learning to spell is important for success in school and in life. For instance, spelling serves as a foundation for higher-level tasks such as composing. Now that people have so many opportunities to text and to use social media, spelling and writing are increasingly important. Spell checkers can sometimes help, but they are not always available and, especially when a spelling is quite deviant, are not always helpful.

The focus of this entry is spelling development in typically developing learners of alphabetic writing systems. The entry begins with a discussion of children's early spelling attempts and moves on to a discussion of more sophisticated spellings. It then presents and discusses theoretical perspectives on spelling development. Research on spelling development can have implications for how best to teach children to spell, and these implications are considered in the course of the discussions.

1 Prephonological Spelling

Well before children understand how writing represents speech, they begin to learn about some of the visual characteristics of writing (Treiman & Kessler, 2014). Knowledge about one such aspect, that writing is visually different from drawing, emerges quite early. Children as young as 2 and 3 years make somewhat different kinds of marks when asked to write than when asked to draw. For example, the scribbles that children make when asked to write tend to be smaller than those they make when drawing. When asked to judge whether a child's production was intended as writing or drawing, adults perform above the level expected by chance. Young children also start learning about the conventional spatial arrangement and direction of written units. Three- to 4-year-old learners of English often arrange their writing attempts along horizontal lines and produce lines of writing from left to right. Moreover, young children have some knowledge about the set of symbols in the writing of their culture. English-speaking children accept letter strings from the Latin alphabet as writing more readily than symbols of other writing systems, such as Chinese, as early as 3 years of age. As they get more experience with print, children produce recognizable marks in their own writing.

Although some 4-year-olds use conventional letters when asked to write words, their letter use often does not reflect any knowledge about the systematic relations between sounds and letters that are embodied in their writing system. For example, one child spelled *ant* as ‹beimmio› and *motorcycle* as ‹pp›. (Angled quotes, ‹ ›, are used for content that is cited as characters of writing.) Children who do not yet use phonologically plausible letters to represent sounds in words are called *prephonological* spellers. These children have not grasped the *alphabetic principle*—the idea that letters represent the sounds of language. They do not even use more letters, on average, to spell long spoken words than short spoken words. For example, the child mentioned above used more letters for *ant*, which has only one syllable, than for *motorcycle*, which has four syllables.

However, prephonological spellers appear to have learned about some nonphonological aspects of writing—not only general aspects of writing such as the small size of the marks but also more detailed aspects. For example, the frequency with which prephonological spellers use particular letters is related to the frequency with which the letters appear in written materials targeted at young children. Similarly, prephonological spellers' use of *digrams*, pairs of adjacent letters, reflects the frequency with which the digrams occur in their environment. For example, prephonological spellers who have been exposed to English are more likely to produce ‹th›, a relatively common digram, than ‹mh›, a rare digram (Pollo, Kessler, & Treiman, 2009). Learners of different languages produce spellings that differ in some respects, reflecting their exposure to different writing systems. The proportion of letters in words that are vowels, for instance, is higher in Portuguese than in English. Correspondingly, Portuguese-speaking prephonological spellers produce a higher proportion of vowel letters than English-speaking prephonological spellers. These findings suggest that, even before they understand how letters represent sounds, children have picked up some information about how letters are used in their writing system. This knowledge about *graphotactic* patterns is not limited to knowledge about individual letters. It also includes knowledge about the arrangement and ordering of letters, as reflected in children's use of digrams.

Prephonological spellers' letter use reflects their exposure to specific kinds of writing that are particularly frequent or important to them. One word that young children are especially familiar with and interested in is their own first name. When asked to spell words other than their name, prephonological spellers show a tendency to use letters from their names (Both-de Vries & Bus, 2008). For example, a child named Gavin wrote *throwing* as ‹gaiv› and *water* as ‹agvuig›. Given the emphasis on learning of letter names in alphabetical order in some societies, children in these societies frequently see sequences of letters in alphabetical order. Such exposure may also be reflected in children's spellings. Indeed, prephonological spellers in the United States and Brazil are more likely to produce digrams that consist of letters in alphabetical order (e.g., ‹ef› in ‹laef› for *stand*; ‹jk› and ‹kl› in ‹ajklp› for *door*) than would be expected by chance (Pollo et al., 2009). Such overuse of letters from the child's name and alphabetically ordered sequences shows that prephonological spellers attend to and learn about patterns to which they are exposed, even without explicit teaching.

Children's spellings improve in some nonphonological aspects during the period in which they spell in a prephonological manner. For example, older preschoolers are more likely than younger preschoolers to produce recognizable letters and arrange them along horizontal lines. Also, older prephonological spellers' digram use is more

closely associated with the frequency of the digrams in their writing system than is the case for younger prephonological spellers. This means that older prephonological spellers' productions seem more wordlike to adults (Treiman, Kessler, Boland, Clocksin, & Chen, 2018).

2 Early Phonological Spelling

Children eventually grasp the alphabetic principle and begin to use some phonologically plausible letters in their spelling. For example, a 5-year-old beginning phonological speller may write ‹b› for *ball*, ‹kp› for *cup*, and ‹bkte› for *book*. Although these spellings are incorrect, they reflect the child's beginning attempts to relate sounds in speech to letters.

Children's early literacy-related experience and knowledge can help them move into phonological spelling. Experience with letters in their names can play an important role. For example, parents and preschool teachers may talk with children about the letters from the children's names, particularly the first letter. Talk about how ‹j› is used in *John* and *jar* may help John link the first letter of his name to the sound it represents. Consistent with this idea, Both-de Vries and Bus (2008) found that, as a group of Dutch-speaking 4.5-year-olds began to spell phonologically, they were more likely to use the first letter of their name in a phonologically plausible manner than to use other letters in this manner.

Children may also use their knowledge of the names of letters as they move from prephonological to phonological spelling. For example, a child who knows that ‹y› is named /waɪ/ may use this letter to represent the /waɪ/ sequence that she hears in /waɪl/ (*while*), writing this word as ‹yl›. (Throughout the entry, slashes, / /, are used for pronunciations in the International Phonetic Alphabet.) Evidence for use of name letters comes from a study in which children spelled nonwords (Treiman, 1994). Some nonwords contained a letter name in their pronunciation (e.g., /dɑr/ contained /ɑr/, the name of ‹r›); other nonwords did not contain any letter names (e.g., /dɑb/). US 5-year-old preschoolers did not always produce phonologically plausible spellings for nonwords such as /dɑb/. However, exploiting their letter-name knowledge, they often used plausible spellings such as ‹r› or ‹dr› to spell /dɑr/. Spellings such as ‹yl› for *while* may appear quite odd to teachers, who may not have had sufficient opportunities in their training to understand the basis of these errors. It is important to help teachers recognize that spelling errors such as ‹yl› for *while* reflect children's beginning attempts to represent the sounds in words and are not random errors.

In order to choose reasonable letters to represent sounds, children need to first break up spoken words into *phonemes* (individual speech sounds). This task of *phonemic analysis* can be difficult for young children, and difficulties in this process can contribute to incomplete spellings such as ‹b› for *ball* and ‹d› for *door*. When asked to spell made-up words with an initial consonant, a vowel, and a final consonant, the 6-year-old kindergarteners studied by Treiman, Berch, and Weatherston (1993) were more likely to use plausible spellings for the initial consonants than the vowels or final consonants. Superior performance with initial phonemes may reflect young children's limited ability to segment spoken sequences into phonemes. The first phonemes of words are generally easier to access than later phonemes and are therefore more likely to be represented in

print. Spellings such as the aforementioned ‹dr› for /dɑr/ also reflect children's difficulty with phonemic analysis, in this case analysis of sequences such as /ɑr/.

As their phonemic analysis ability improves, children spell more of the sounds in words. However, they may still make errors on sequences that are difficult to segment. For example, a child may spell *hand* as ‹had›, failing to use a separate letter for the first consonant (/n/) in the consonant cluster (/nd/). Common in early phonological spelling, this omission error occurs because children consider the nasal sound (/n/) to be part of the preceding vowel instead of a phoneme on its own (Read & Treiman, 2013; Treiman, 1993). Omission errors may also occur for words beginning with a consonant cluster. For instance, a child who writes ‹bo› for *blow* has failed to represent the second consonant of the consonant cluster, /l/. Such omissions reflect children's difficulty in conceptualizing the two consonants of the initial cluster as separate units. To help children overcome difficulties in spelling consonant clusters, the spellings of sound sequences such as /bl/ can be introduced as wholes (‹bl›). Training in phonemic analysis can focus on consonant clusters and other sequences that are difficult to segment, such /ɑr/.

After they have divided spoken words into individual phonemes or groups of phonemes, phonological spellers attempt to represent each one with a letter or letter group. Young spellers' letter choices may be influenced by details of pronunciation and may deviate from the conventional choices of the writing system. For example, when /t/ or /d/ occurs between a stressed vowel and an unstressed vowel, speakers of American English pronounce it as a quick *tap* of the tongue against the top of the mouth. Thus, they pronounce *latter* and *ladder* alike. The tap is *voiced*, meaning that the vocal cords vibrate during the production of the sound. This makes the tap more similar to /d/, which is also voiced, than to /t/, which is not voiced. Children thus often spell the tap with ‹d›, as in ‹sweder› for *sweater* and ‹bodom› for *bottom* (Read & Treiman, 2013). As another example, children sometimes spell *sky* as ‹sgie›. The use of ‹g› reflects that children consider the second sound of *sky* to be similar to /g/ (the first sound of *guy*), as it is on a phonetic basis. Also, beginning phonological spellers sometimes produce such spellings as ‹chruk› for *truck* and ‹jrop› for *drop*. These errors reflect the pronunciation of the initial sounds of these words. The initial sound of *truck* is similar to the sound that is conventionally spelled with ‹ch›, as in *chin*. The initial sound of *drop* is similar to the sound that is spelled with ‹j›, as in *juice*, or ‹g›, as in *gem*. Children implicitly recognize these similarities and may use ‹chr› and ‹jr› or ‹gr›, respectively. Given their difficulties with consonant clusters, children may also omit ‹r› and use ‹ch› and ‹j› or ‹g›.

The letter choices discussed above suggest that young spellers go beyond rote memorization of full or partial spellings they have seen. For example, a learner of English would not have seen words beginning with ‹chr› or ‹jr›. The spelling errors instead result from children's attempt to represent the sounds they hear. To guide children's spellings, it is important for teachers to understand the reasons behind the errors and to acknowledge that the children who produced them were attending to the sounds in words rather than picking letters at random. Teaching children to spell the conventional spellings of ‹tr› and ‹dr› as wholes may be helpful here.

Although many of the letter choices made by phonological spellers are plausible considering their knowledge about sounds, not all letters in these children's spellings are phonologically plausible. Early phonological spellings sometimes include *intrusions*: letters that do not appear to correspond to any of the sounds in the words. For instance, a child named Cate wrote ‹bkte› for *book*. Whereas ‹b› and ‹k› are phonologically

appropriate, ‹t› and ‹e› are intrusions. Examining spellings produced by a group of US kindergarteners, Treiman, Kessler, and Bourassa (2001) found that letters from children's first names were particularly likely to occur as intrusions, as in Cate's use of ‹t› and ‹e› in her spelling of *book*. Moreover, letters that frequently occur in reading materials for young children (e.g., ‹t›) were more likely to be used as intrusions than letters that are rare (e.g., ‹x›). Thus, children's exposure to letters can help explain their intrusion errors.

Early phonological spellings are also influenced by the graphotactic patterns of the writing system. In English, one such pattern involves the position of double consonants. Double consonants may occur in the middles or at the ends of words (e.g., *hello*, *grass*), but they almost never occur at the beginnings. The US 6-year-olds in one study were more likely to include doublets in the final than the initial position of their spellings (Treiman, 1993). Further evidence of early knowledge of doublet position comes from a study in which US children learned made-up spellings (Wright & Ehri, 2007). Some of the made-up spellings contained consonant doublets that were graphotactically very odd because they were in the initial position (e.g., ‹rrag›), and others contained doublets in the more common final position (e.g., ‹padd›). Six-year-olds found it easier to learn the made-up spellings with final doublets than those with initial doublets. Also, children remembered the spellings with final doublets better on a later test. Together, these findings show that children who have begun to spell phonologically have some knowledge of certain graphotactic patterns and use this knowledge in their spelling.

Another aspect of writing that may influence early spelling is *morphology*: the smaller meaningful units that make up words. For example, *dirty* is a morphologically complex word that contains a stem, *dirt*, and a suffix, *y*. Some writing systems, including English and French, represent the spoken language at the level of morphology as well as phonology. For example, when the word *magician* is derived from *magic*, the letter ‹c› is preserved despite a change in its pronunciation. This *morphological constancy* can potentially help spellers choose correct letters. Indeed, children seem to benefit from morphological constancy when spelling words such as *dirty* and *cuter*, which contain taps (Treiman, Cassar, & Zukowski, 1994). As mentioned earlier, US kindergarteners show an overall tendency to spell taps with ‹d›, consistent with the voicing of the taps. This tendency points to an influence of phonology in spelling. Evidence for an influence of morphology is also found: Children are more likely to correctly choose ‹t› for words such as *dirty*, which have a stem ending with /t/, than for words such as *city*, which do not have such a stem. Children also use morphological information when spelling other types of words. For example, as previously reviewed, children sometimes omit nasals in final clusters (as in *hand*). The US kindergarteners in Treiman and Cassar's (1996) study were less likely to omit the nasal of a cluster in words with two meaning units where the first unit ends with a nasal (e.g., *tuned*) than in otherwise similar words where this is not the case (e.g., *brand*). Similarly, British 6-year-olds spelled words such as *rocked* (with two meaning units) more accurately than *rocket* (with one meaning unit; Deacon & Bryant, 2006). These findings suggest that, from a young age, children use their knowledge of stems when spelling morphologically complex words.

3 Learning of More Complex Spelling Patterns

Learning to represent each phoneme in a word with a plausible letter or letter group, although important, is not sufficient for being a good speller. This is particularly true for writing systems such as English and French, which have relatively inconsistent sound–letter correspondences. In these systems, it is common for the same phoneme to have different spellings in different words. For example, the spellings of /i/ in English include ‹e› as in *he*, ‹y› as in *happy*, ‹ee› as in *deep*, and ‹ie› as in *chief*. However, children do not randomly choose among the alternative spellings. They learn how often different sound–letter correspondences are used in their writing system and how graphotactic context and morphology can help in deciding which letters to use in which situations.

Some letters or letter groups are used to represent a particular sound more often than others. For instance, although both ‹e› and ‹ie› may spell /i/ in English, ‹e› is used in more words than ‹ie›. The frequency with which sound–letter correspondences are used in a writing system starts to influence children's spelling not long after literacy instruction begins. A study of French first-graders showed that they spell words involving frequent sound–letter correspondences more accurately than those involving rare sound–letter correspondences (Lété, Peereman, & Fayol, 2008).

The spelling of a sound may be influenced by the context in which the sound occurs. For example, overall, /ɛ/ is most often spelled as ‹e›, as in *hen*. However, when this sound is followed by /d/, ‹ea› spellings (as in *bread*) are more common than ‹e› spellings. Correspondingly, US 8- to 10-year-olds in one study used ‹ea› to spell the vowel in made-up words such as /glɛd/ more often than in made-up words such as /glɛp/ (Treiman & Kessler, 2006). The spelling of a vowel may also be influenced by the consonant that precedes the vowel. For example, ‹a› is more likely to spell /ɑ/ when the vowel is preceded by /w/, as in *want*, than when it is preceded by other consonants. Consistent with this pattern, 7- to 11-year-olds in the same study used ‹a› for items such as /kwɑp/ more often than for items such as /blɑp/. Such findings suggest that children use context to help decide what letters to use for particular sounds, vowels in these examples. The ability to use context in this way develops relatively slowly. This may reflect the fact that children need to have experience with words exemplifying different contexts and spellings and, in some cases, there are not many such words.

Schoolchildren are often taught the most common spelling or spellings of a phoneme, but often they are not taught when to use each one. Although children pick up context-dependent patterns on their own, this process is relatively slow. Direct instruction can help children to learn more quickly. Teachers can present examples of words in which a sound is spelled differently in different contexts (e.g., the spellings of /ɑ/ in *want* and *pond*) or can help children to generate such examples. They can help children to understand that the context in which a sound occurs influences its spelling.

Consideration of graphotactic patterns can also help children choose among alternative spellings. As has been discussed, even young children show some knowledge that double consonants rarely occur at the beginning of words. Children continue to learn about other patterns involving the position of doublets as they get older. In French, for example, double consonants can occur after vowels, as in *messe* 'mass,' but not after other consonants (*melsse* is not allowed). Knowledge of this graphotactic pattern appears to emerge around 8 years of age (Pacton & Fayol, 2000). Children also become increasingly sensitive to the frequency with which different doublets occur in

their writing system. Thus, French-speaking first- to fourth-graders judge nonwords containing common doublets (e.g., ‹mm›) to be better spellings than nonwords containing less common doublets (e.g., ‹cc›; Pacton, Perruchet, Fayol, & Cleeremans, 2001). Children can use their knowledge about which doublets tend to occur to help them decide whether to use a double letter or a single letter. Another example of how graphotactic context can help in making decisions about spelling comes from English, where one-syllable words such as ‹deaf›, in which the vowel sound is spelled with two letters, do not have final consonant doubling. Spellings such as ‹deaff› and ‹poull› do not occur in English, although spellings such as *Jeff* and *pull* do. When asked to spell one-syllable nonwords, children as young as 7 were more likely to use single consonants (e.g., ‹f›) instead of double consonants (e.g., ‹ff›) if they used two letters for the vowel than if they used one letter (Hayes, Treiman, & Kessler, 2006). For example, children were more likely to produce ‹vaff› than ‹vaiff›. Children are rarely taught explicitly about such graphotactic patterns. Rather, they seem to learn them in an implicit way from exposure to print.

As has been discussed, children begin to use morphological information to guide their spelling at an early age. As their experience with print increases, children continue to use morphological information to help reduce phonologically based errors such as the incorrect use of ‹d› for taps in words such as *dirty* (Treiman et al., 1994). Children's increasing morphological knowledge can also help them spell other words that may otherwise be challenging. In French, for example, many words end with consonants that are not pronounced in speech. For instance, the ‹t› of *ouvert* 'open' is not pronounced. When spelling this and similar words, therefore, it is hard for children to decide which consonant letter to use. However, for some words with silent consonant endings, consideration of morphologically related words can help children make such decisions. For example, consideration of the feminine form of *ouvert*, *ouverte* (which is pronounced with a final /t/), can help children infer that *ouvert* is spelled with a final ‹t›. Indeed, 7- to 9-year-old French-speaking Canadian children are better at spelling words such as *ouvert* than words such as *foulard* 'scarf,' which also have a silent final consonant but no related form that provides a clue to the identity of the consonant (Sénéchal, 2000).

When information pertaining to different aspects of writing is available, children use multiple sources of information to spell the same word or the same sound. One case involves children's spelling of plural nouns in English. English plurals that end with the sound /z/ (e.g., *fibs*) and those that end with the sound /s/ (e.g., *hats*) are both spelled with final ‹s›, even though the pronunciations of the final parts differ. In a word such as *fibs*, use of ‹s› for /z/ is predicted by morphology—the fact that the plural marker is spelled with ‹s› even when pronounced as /z/—and graphotactics—the fact that ‹bs› but not ‹bz› occurs at the end of English words. For words such as *fees*, use of ‹s› is predicted only by morphology. On graphotactic grounds, ‹fease› (as in *please*) or ‹feeze› (as in *freeze*) would also be acceptable. British 5- to 8-year-olds are more likely to use ‹s› for words such as *fibs* than for words such as *fees* (Kemp & Bryant, 2003), suggesting that children use both the morphological and the graphotactic patterns. Evidence of joint influences of morphology and graphotactics has also been reported in learners of other languages, including French. These findings suggest that children learn about and use different types of patterns in their writing system. They are particularly likely to use a spelling if multiple patterns point to such use.

4 Theoretical Perspectives on Spelling Development

Various theoretical perspectives have been proposed to describe and explain spelling development. One particularly influential perspective is the *phonological perspective*, which focuses on children's increasing ability to map sounds onto letters (Ehri, 1986). During an initial period often called the *prealphabetic* phase, children's spellings are thought to be random letter strings that are not related to the sounds in words. As children move to the next phase, the *partial alphabetic* phase, they represent some of the sounds in words, but not all. For example, a partial alphabetic speller may produce ‹b› or ‹bl› for *ball*. During the third phase, the *alphabetic* phase, children represent all of the sounds in words, spelling *ball* for example as ‹bol›. Although alphabetic spellings are not necessarily conventional, they are plausible representations of the sounds in words. Only in the last phase, the *consolidated alphabetic* phase, do children begin to use conventions of graphotactics and morphology in their spelling. Knowledge about graphotactic and morphological patterns is said to emerge around midway through second grade, after children have learned about the phonological aspects.

The phonological perspective has contributed in many ways to our knowledge of spelling development. Particularly important is its notion that children learn to systematically link letters to sounds rather than relying on rote memorization, as had earlier been thought. Moreover, many of children's spelling errors are based on phonology. However, the phonological perspective gives short shrift to nonphonological aspects of spelling development. As mentioned earlier, some graphotactic and morphological knowledge emerges as early as preschool and kindergarten. Such evidence is not compatible with the phonological perspective, which proposes that children do not incorporate graphotactic and morphological patterns in spelling until later.

According to an alternative perspective, the *constructivist* perspective (Ferreiro & Teberosky, 1982), children learn to spell by developing and testing their own hypotheses about writing. Like the phonological perspective, the constructivist perspective outlines different stages of development. During each stage, children hold a different set of hypotheses about writing. Some of these hypotheses turn out to be false, and moving into a new stage often requires children to discard earlier hypotheses and construct new ones. During the first stage, the *presyllabic* stage, children do not understand how writing represents speech but are thought to have certain beliefs about the graphic properties of writing. One such hypothesis is that the characteristics of written words should resemble characteristics of the objects that they represent. For example, a 5-year-old Spanish-speaking child produced a longer wavy line for the word *oso* 'bear' than for *pato* 'duck,' apparently trying to indicate the difference in size between the two animals (Ferreiro & Teberosky, 1982). During the next stage, the *syllabic* stage, children are said to hold the hypothesis that each syllable in spoken words corresponds to a letter in written words. As an example, a 5-year-old Spanish speaker wrote two letters (‹oo›) for the two-syllable word *oso* 'bear' and three letters (‹cuo›) for the three-syllable word *patito* 'duckling.' In the last stage, the *alphabetic* stage, children represent each phoneme in words with a letter or letter group.

A merit of the constructivist perspective is that it acknowledges children's early knowledge about writing. Children are thought to know a good deal about the graphic properties of writing in particular before they grasp the alphabetic principle. However, much evidence supporting the constructivist ideas comes from observational studies.

When tested using more rigorous methods, some of the constructivist ideas are supported, but not all. For example, the idea that young children produce larger writing for words representing large objects (e.g., dinosaur) than for words representing small objects (e.g., mosquito) has received some support (Zhang & Treiman, 2015). However, the idea that young children use one symbol for each syllable in a word has not been supported. Indeed, as mentioned earlier, prephonological spellers often do not even produce more letters for words with more syllables than for words with fewer syllables (Pollo et al., 2009).

An emerging perspective on spelling development, the *statistical-learning* perspective (Pollo et al., 2009), postulates that children implicitly attend to and pick up frequently occurring and co-occurring patterns in the writing to which they are exposed. Statistical learning operates in many domains, including acquisition of spoken language and processing of visual information, and it is available from early in development. For example, infants show sensitivity to statistical patterns in their learning of sound sequences. According to this perspective, statistical learning underlies the learning of patterns in written language, including learning of graphotactic patterns and learning of patterns relating letters to sounds.

Much recent research has provided evidence for the statistical-learning perspective. As has been discussed, children begin to learn about nonphonological patterns of writing from an early age. A sensitivity to letter and digram frequency appears to emerge before children understand how writing represents speech. As their exposure to writing increases, children use their statistical-learning skills to learn about more complex patterns, forming associations between letters and sounds and learning how the context in which a sound occurs can help in choosing among alternative spellings. Further support for the statistical-learning view comes from the finding that a variety of patterns influence children's spellings.

5 Conclusions

Traditionally, learning to spell was considered a matter of rote memorization. Thus, children may receive a list of words each week and may be asked to memorize their spellings in preparation for an end-of-the-week test. However, the words may not be chosen to illustrate particular spelling patterns. Newer research shows, however, that there are multiple patterns even in writing systems that are thought to be highly irregular, such as English. Children implicitly learn about some of these patterns, but direct instruction about the patterns can help them learn more rapidly than they otherwise would. In order to help children learn to spell, teachers can benefit from an understanding of how spelling develops and what types of errors children make.

SEE ALSO: Phonology; Reading; Writing

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