QUARTERLY

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# Learning to Spell is a Developmental Process—Not Rote Memorization of Words

Richard E. Hodges

Spelling as a school subject has a long, time-honored tradition, its origins traceable to the beginnings of Western civilization. For the most part throughout the centuries, students learning to spell have been taught that rote memorization of words was the route to spelling mastery, not only because of the commonly held view that memorization promoted mental discipline, but also because of the belief that the vagaries of English spelling demanded this method of learning. It is hardly surprising that, even today, memorizing words for spelling purposes continues to be a common instructional practice; for this traditional approach to spelling study is firmly rooted in our educational history.

In recent years, however, scholars of language and of child learning have provided fresh insights into the nature of learning to spell. Their findings demonstrate that the proper study of spelling necessitates placing children in much more active roles in learning to spell, and, in turn, challenges traditional views that passive rote memorization is the base of spelling instruction. Let's briefly review some important research findings and their implications for the teaching of spelling.

## What Spelling Is

Spelling is a process in which language is represented in visual form by means of graphic symbols. Most of the world's languages use graphic symbols (or graphemes) to stand for speech sounds (or phonemes) of spoken language and a writing system of this type is termed an alphabetic writing system, or orthography. Ideally, such an orthography would assign a separate, distinct grapheme for each speech sound; it would be said to be in one-to-one correspondence between speech sounds and graphic symbols.

Although English orthography is based on this principle, at first glance it seems hopelessly erratic in the manner in which the alphabet letters reflect the spoken language. Teachers and students alike are only too aware that many words of the language don't appear to "spell as they sound," and it is because of this seeming disparity between letters and sounds that spelling instruction has historically relied on memorization as the principal method to secure spelling accuracy.

Numerous studies carried out in recent years by linguists and others interested in the nature of English spelling reveal, however, a quite different picture of our writing system. These investigations show that relationships between the sounds and letters of our language are affected by other elements, elements such as the manner in which prefixes and suffixes are used in forming words. In fact, contrary to historic belief, English spelling is reasonably systematic, but in ways more complex than are revealed by a superficial glance.

## Learning to Spell

A system or structure, such as that which governs English spelling, is an organization of some pattern of events into an understandable framework. Language itself must, of course, be systematic or else it could not be learned in the absence of direct teaching so readily by most young children in a few brief years after birth. Learning to talk results from the young child's development over time of an understanding of the structure of language, a process that is governed by the constraints of a biological timetable and experience.

The many studies of oral language development reveal children's remarkable propensities to try to make sense of the world around them by using available information. In like fashion, recent investigations of children's written language development disclose similar procedures at work. These studies demonstrate that, like learning to speak, learning to write is a developmental process.



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## In This Issue



EDPRESS

# From the Editor

Walter B. Barbe

This issue of *Spelling Progress Quarterly* opens with an article by Richard E. Hodges, a well-known researcher in spelling and spelling instruction, entitled "Learning to Spell Is a Developmental Process--Not Rote Memorization of Words." Dr. Hodges says that students traditionally have been taught to spell by memorizing lists of words, because at first glance English orthography "seems hopelessly erratic." Recent studies, however, show that English spelling is systematic, and that, in fact, if students are given the chance "to explore the patterns or 'rules' that form English spelling and to apply their developing knowledge in functional writing," they can learn to spell. Spelling study, therefore, should engage "the interests of students in the nature and uses of words, not simply their spellings in study lists."

Elisabeth McPherson's article, entitled "Spelling, Revisited," is a message from a SLATE (Support for the Learning and Teaching of English) *Starter Sheet*, published by the National Council of Teachers of English in January 1984. She says that "the most important thing about spelling is that it's something that writers use. Until writers use it, spelling has no value." In the process of writing, punctuation, syntax, usage, and especially spelling are part of editing rather than composing. "Worrying about correct spelling as they write can prevent writers from producing anything worthwhile."

In "Graphic Images and Successful Spelling," Azalia Francis discusses the effect the visual images of words have on learning to spell. She states that the quality of the graphic symbols representing words significantly influences "a person's ability to acquire, retain, and reproduce the image of a word." Word models, therefore, should be consistent and properly positioned in the writing space, and of the same size and shape as the words students are expected to produce in their writing. Elisabeth McPherson also comments on the importance of the graphic image in her article. She says that learners with strong visual memories "can 'see' the way the word ought to look and automatically reproduce it"; but the rest of us with "less accurate visual memories" must rely on a dictionary to help us spell. According to Dr. Francis, visual impact would enhance visual memory. Her article is especially for those readers who have thought, "That word just does not look right."

The article on computerized spelling checkers ("Word Processing and Spelling" by Michael Milone) might make our readers wonder, "If computers are going to check our spelling, why bother with spelling instruction or spelling reform at all?" First, if word processors became as commonplace as telephones, we would still have to write, and what we write would still have to be understood by ourselves and others. Second, even if computers became the most common medium for communicating ideas, text would still have to be entered into the computer somehow, and the text would have to conform to some widely accepted standard in order to be interpreted by the computer. All of us need to develop our ability to communicate with each other, and since spelling is an aid to communication, it is an important skill to know. The electronic revolution may dramatically change some aspects of our lives, but it will not eliminate the need for spelling.

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The process begins with a child's initial global awareness of writing as another means of expressing language, in which spelling plays a fundamental role. Many children may first use a single alphabet letter to "spell" a word (e.g., *c* for *cat*), next using the names of letters to guide them in spelling words (e.g., *LAD* for *lady*). As with oral language, the rate of development among children may vary in learning to spell; but there is little variation in the growth sequence. Learning to spell then is most assuredly a developmental process.

In learning to spell, the child must gain an understanding of a graphic communications system and how that system relates to oral language, a process that is more complex than can be explained by the use of rote memory to learn the spellings of words. Accomplished spellers, as well as accomplished readers, utilize cues from all levels of language structure—sounds, words, and meaning—as part of their spelling knowledge, a knowledge that can only be gained from extensive experiences with written language over time.

Spelling is also a multisensory process. The study of written language adds a graphic dimension to language development, bringing into play visual and haptic (kinesthetic and tactile), as well as auditory, factors as children learn to see, write, and hear language.

This description of learning to spell is, of course, considerably removed from the traditional view in which habits rather than knowledge formed the base of a spelling curriculum. We now are more clearly aware of the active role that children play in developing spelling skills and that spelling study is more properly the study of words themselves and their uses in writing.

### Spelling Study

In a very real sense, one learns to spell through ongoing interactions with written language, and spelling study should not be kept independent of the uses of written language in daily life. An effective environment for spelling study is one in which students are provided opportunities to explore the patterns or "rules" that form English spelling and to apply their developing knowledge in functional writing.

While youngsters who are just beginning formal spelling study need to develop a thorough understanding of the phonetic base of spelling, instruction should not attend only to sound-letter relationships, but should present spelling as an integrated part of written language. Spelling experiences should proceed from simple and progress toward complex relationships in ways that are appropriate to levels of child development, with provision for review and planned application of acquired knowledge.

Words, not merely sound-letter patterns, should comprise the source of spelling study, and they can be studied in many ways: in terms of the sounds and graphemes from which they are formed, their structural features (e.g., roots, suffixes, prefixes), their historical background, and, above all, their meanings. Spelling instruction ought to capitalize on children's natural and active inquisitiveness about language by providing activities that allow them to try out their knowledge in new situations in which their growing spelling skills are applied and reinforced. Every interaction with written language, whether in formal spelling study or informally in daily writing and reading, affords rich opportunities to gain more understanding about the structure and uses of spelling as a part of writing. Simply put, spelling study involves more than the study of words in lists.

### Spelling and Individual Learning Styles

There are, of course, differences between a child's knowledge of spoken and written language when he or she first enters school. For most children, school offers the first sustained encounter with writing and the truism that instruction should start where the learner is has special relevance in spelling instruction. But there are also differences among children with respect to their modes of learning. For some, greater use is made of the visual features of words than of their oral-aural features, while the reverse is true for others. For some, the kinesthetic and tactile features involved in writing are important aspects of learning to spell. It is therefore important that spelling instruction should provide for individual learning styles and rates through the use of a variety of instructional media and activities.

### Analyzing Spelling Errors

Another truism is that we learn from making mistakes and correcting them, and this observation is especially pertinent in spelling. Simply correcting one's spelling mistakes is not sufficient, however. Analyzing the errors one makes to determine their causes provides knowledge that has a potential to be applied to other words. Hence, being able to distinguish correct spellings from incorrect ones and to correct both the mistakes and their causes should be important goals of spelling instruction. For this reason, a fundamental part of spelling study should involve students in the uses of dictionaries and other resources that can contribute to spelling accuracy.

### Handwriting and Spelling

Handwriting, of course, has special importance in spelling because illegible and misformed letters result in written words that appear to be misspelled or misunderstood. In addition, poor handwriting and poor spelling cause readers to make critical judgments about the writer. Spelling and writing are inseparable activities, and handwriting has an important role in any spelling study.

### Concluding Remarks

Spelling study need not be an unimaginative and routinized experience in the education of students; the rich fabric of the language itself provides the basis for functional understanding of the uses and spellings of words in their written contexts. Spelling instruction should lead the student toward an awareness of and curiosity about spelling in both formal study and in informal settings in and out of school. There are, after all, no crash courses in learning to spell: the development of spelling ability is a continuous undertaking in which new words are added to our spelling repertoire throughout our writing experiences. In the final analysis, spelling study that engages the interests of students in the nature and uses of words, not simply their spellings in study lists, will contribute to the student's spelling competence throughout his or her writing lifetime. ☐

### For Further Reading


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A practical demonstration of computerized spelling instruction will be held at a meeting cosponsored by the Simplified Spelling Society at the IRA annual convention in New Orleans, May 5-9, 1985. The speaker will be Betty Thomson, i.t.a. Foundation, New York. Chairperson for the meeting is Donald Ramtp, Louisiana State University Medical Center, New Orleans, Louisiana. Interested persons who are not members of IRA can attend the meeting only if they obtain a letter of invitation from program organizer Dr. John Downing, Department of Psychological Foundations, Faculty of Education, University of Victoria, P.O. Box 1700, Victoria, B.C., V8W 2Y2, Canada.

# Spelling, Revisited


Elisabeth McPherson


The importance of spelling, as an indicator of whether or not the schools are "really educating" their students, has been greatly exaggerated. When people complain that today's students can't write, too often they mean that when the students do write, they misspell a few words. "Can't write," for these critics, has little to do with saying something worthwhile, with organizing material, with developing ideas or expressing feelings. Rather, for these critics (and some of them are teachers), evaluating a piece of writing means searching for mechanical errors, and prominent among these errors is spelling. Misspelled words are easy to spot and easy to verify. It's a little harder to be absolute about other mechanical problems; authorities sometimes disagree about the placement of commas or the use of capitals. And it's a lot riskier to be dogmatic about clarity or coherence or creativity. The safe and easy way has always been to pounce on the misspelled words.

The result of all this zeal has been to inhibit writing. Halfway through a sentence, too many students stop to brood about spelling—does *written* have one or two *t*'s?—and the interrupted idea is lost. These students can't write well because they concentrate too soon on the details of editing. They are convinced, often with justification, that their teachers or the college entrance boards or members of the public somewhere out there care more about correctness than about content.

None of this means that people don't need to learn to spell. Of course they do. But it does mean that an overemphasis on the importance of spelling can be damaging to writing's real purpose, using written words to get something said.

### Some Facts about Spelling

The ability to spell correctly has no intrinsic value. Aside from a few pastimes, such as playing Scrabble or working crossword puzzles, and a few specialized jobs, such as editing what someone else has written, spelling is useful only when people actually sit down to write. Then, hit or miss, they have to spell, but nobody has shown that memorizing lists of isolated words has much to do with producing those same words in sentences. Or that spending time on "One Hundred Words Most Frequently Misspelled" accomplishes anything except to make writers more self-conscious and more uneasy. Or that performing in

spelling bees does any more than give naturally good spellers a chance to show off. Just as writing improvement comes from practice in writing, and reading improvement from practice in reading, so spelling improvement comes from using words in context.

It may help to know what spelling is and how it developed. Spelling is a system of using symbols—the letters of the alphabet—to represent the sounds of speech. In some languages the correspondence between the speech sounds and the written symbols is fairly exact. For each speech sound there is a single letter, and that letter always stands for the same sound and no other. Such a desirable state of affairs does not, however, exist in modern English.

Our alphabet doesn't correspond very well to the sounds we make when we talk. Americans use about forty-three different speech sounds, depending on where they grew up, but we have only twenty-six letters in our alphabet. Of those twenty-six, three consonants are unnecessary. The sounds represented by *c* can be replaced, and often are, by *k* or *s: cat, kitty; city, silly*. The sounds represented by *qu* might be more accurately represented by *kw (quite)*, and the sounds represented by *x* more accurately by *ks (tax, tacks)*. On the other hand, we have four very common consonant sounds that can't be represented by any single letter: the two sounds heard in *with* and *wither* and the sounds heard in *shut* and *church*. To further complicate the situation, the sound usually represented by *sh* is sometimes indicated by *s* alone *(sure* and *sugar)*. When we come to vowel sounds, the situation is even more random. In speech, most dialects use about twenty-one vowel sounds; yet our alphabet has only five vowel letters, or seven if we count the semivowels, *y* and *w*.


When speakers of other languages say that English is hard to learn, they don't mean that speaking it is difficult; they mean that the spelling system seems irrational. Why do we have *write* and *right* and *rite* when we say them all the same? Why do we spell *through* and *though* and *cough* with the same *ough* when we say them all differently? It was this state of things that led to Shaw's famous remark that *ghoti* spells *fish: gh* as in *laugh*, *o* as in *women*, *ti* as in *ambition*.

The history of how the English language developed accounts for much of this confusion. English was first written by scholars trained in Latin using the Latin alphabet, but the sounds of Latin are not the same as the sounds of English. When thousands of words from Latin and Greek were added during the Renaissance, spellings from those languages came too. English has always been a borrowing language, and for the last few centuries, borrowed words have meant borrowed spellings. The richer the English vocabulary became, the more spelling confusion grew.

But the invention of printing in the late fifteenth century is responsible for most of the problem with ordinary words. Four hundred years ago, the way English was spoken sounded quite different from the way we speak it today. Some speakers still made the sounds represented by the final *e* in words like *late* and the *gh* in words like *night*, so printers included the symbols for those sounds in their spelling. Then printers discovered that their lives would be much easier if the same words were always spelled the same way, so they standardized the system. Until that time, misspelling words was not considered a material offense. Quite reputable writers spelled words first one way, then another, often in the same piece of writing. Standardized spelling changed all that, and modern writers are stuck with an arbitrary, outdated system invented four hundred years ago.

It's reasonable to ask, " Well, if the system is bad, why don't we change it?" The answer is that many people have tried, and nobody has succeeded. From Mulcaster in 1582 to Noah Webster, the dictionary maker; Isaac Pitman, the inventor of shorthand; William Dean Howells, the novelist; Andrew Carnegie, the financier; and George Bernard Shaw, the dramatist—to mention only a few well-known names—people have written books, organized societies, and given money for a single purpose: to reform the spelling system. All this activity has resulted in only a few minor changes: the dropping of the *u* from such words as *color*, for instance, and the change from *re* to *er* in such words as *theater*. Even those changes have occurred only in America, not in Great Britain.

If the spelling system changes at all, the change will come slowly. Some of the reasons for this conservatism are good, some less good. People who have learned the present system, or most of it, are emotionally attached to the old ways. Such simplified spellings as *nite* or *thru* look wrong to them. If they don't quite believe that God ordained how English should be spelled, at least they feel there is a genuinely "right way" to spell words and that spelling them any other way is a certain sign that the language is being ruined. When Shaw left his fortune for improving English spelling, the British courts declared the will invalid.

But there are some sensible reasons for objecting to change. Libraries would become out-of-date or as

hard to read as Chaucerian English, and a spelling system beautifully adapted to one dialect of English—the way they talk in Boston, perhaps—would be a poor fit with the way English is spoken in Brooklyn or Baton Rouge or Bombay.

Even though now, and probably for a long time in the future, we have to live with an archaic system, some bits of comfort exist. For one thing, speakers of all English dialects have to make about the same number of adjustments as they learn to spell, since the system doesn't accurately reflect what any of them say. For another, the majority of English words *are* phonetic; that is, there is a more or less regular correspondence between the sounds and the letters that represent them. The trouble comes mainly with common words and homonyms: *know, doubt, phone; to, too, two;* and *there, their, they're,* for example. If much of the system were not phonetic, learning to read would be impossible, or as difficult as it is in classical Chinese, where thousands of characters represent entire words or parts of words.


The result is that all English-speaking children who can read anything already know a good deal about English spelling. To read at all, they must decode—translate the spelling system other writers have used into words with which they are familiar. The more they read, the more conventional spellings become imprinted in their memories. Constant readers are likely to be good spellers. In fact, there is considerable reason to think that most spelling is learned, not from practicing in workbooks and memorizing rules, but from seeing words in use, over and over again.

Not all proficient, or even omnivorous, readers are secure spellers, however. Apparently some people have strong visual memories. They can "see" the way a word ought to look and automatically reproduce it. These are the people who, when they are asked how to spell a word out of context, often say, "Wait a minute. Let me write it down." For people with less accurate visual memories, one way usually looks as good as another. These are the people who need to keep a dictionary handy.

The cry, "But they can't spell!" often means quite different things. If "can't spell," as applied to an eighteen-year-old, means not knowing the difference between *what* and *were,* the problem is real, but it's more likely to mean a reading impairment than a spelling difficulty. Marking "SP!" again and again won't be much help. On the other hand, if "can't spell" means uncertainty about *broccoli* or *embarrass,* the problem is trivial; the student needs to look it up, like most of the rest of us.

Teaching students how and when to use a dictionary is one of the essentials of good English instruction. But the "when" is important. Very little research has been done, except in the primary grades, on how people learn to spell, but a great deal has been discovered about how people learn to read and write, especially about how they learn to compose. At all levels, from kindergarten to college, emphasis has shifted from writing as product to writing as process. Effective English teachers are less concerned with marking mistakes and assigning grades on a finished piece of writing, more concerned with helping students find ideas, put those ideas into words, evaluate what they have written, revise it, and come up with something worth reading. This emphasis on process means that "cleaning it up" is always a last step. Students are told that, in the final copy, conventional spelling makes writing easier for readers, so that they will be neither distracted nor turned off by what looks like a mistake.

In the early elementary grades, this emphasis on process means encouraging children to use invented spelling and praising what they have achieved. There is no evidence that the acceptance of invented spelling establishes or reinforces habits that will persist or be hard to break. As the children's language abilities mature, so does their spelling. The difference is that children allowed to take risks with writing are more comfortable when they write, less self-conscious about "getting it wrong."

In high school and college, this emphasis on process means that the conventions of writing—punctuation, syntax, usage, and especially spelling—are regarded as matters for editing rather than composing. Some students need a lot of reassurance. Too many of them have been convinced that they can't write because their earlier efforts have been red-marked, and often failed, not for what they said but for how they spelled it. "Five misspelled words mean an automatic F" has not disappeared from many composition classes.

Finally, then, the most important thing about spelling is that it's something writers *use.* Until writers need to use it, spelling has no value. Worrying

about correct spelling as they write can prevent writers from producing anything worthwhile. Failure to produce anything they consider worthwhile can keep them from caring how it looks, from bothering to find what may simply be careless misspelling and change it to something more acceptable.

### What to Do about It

- Read what students have written for content rather than mere correctness. When students are satisfied with the final draft, and only then, give them the guidance they need on spelling.
- Refrain from the false advice that pronouncing words correctly will help in spelling them. Such advice may work for *library*, where pronouncing the first *r* is a reminder to put it in, but the advice won't work for such words as *often* or *interesting*, where it only leads to unnatural pronunciation.
- Remind students that a few spelling rules actually do work: when to double consonants or drop final *e*'s, for instance (*hopping* and *hoping*).
- Help students remember the old tricks for distinguishing troublesome parts (a principal is supposed to be a *pal*) and encourage them to devise their own tricks for their own problems.
- Teach students how and when to use a dictionary and tell them honestly that you often need to use it yourself. Let them see you doing it.
- Discuss the oddities of the spelling system. Talk about how the system got the way it is. Sometimes knowing where words came from can help in remembering how they are spelled. Most *ph* and *ps* words (*phonetics* and *psychology*) came from Greek, for example, and most prefixes came from Latin prepositions.
- Reward good spelling, but don't over-reward it or over-penalize mistakes. Treat conventional spelling as a courtesy to readers, not as a matter of life and death.
- Explain honestly the public prejudices about spelling. Tell older students that even though it seems silly, judgments will be made about their intelligence and their general abilities based on how they spell.
- Remember that the self-appointed guardians of the language don't share your understanding of how people learn to write and to spell. Remember that you'll have to explain what you do and why, probably over and over, to parents, to colleagues in other disciplines, to that excited letters-to-the-editor part of the public.
- And cheer yourself up with an ironic reversal. Not too long ago, it was fashionable to say that persnickety schoolma'ams were passionately devoted to spelling and ordinary people didn't care much about it. Now the public, or some of it, is wailing about illiteracy, while good language arts teachers are using a better definition of literacy: the ability to read with pleasure and understanding, and the ability to write something real. Spelling enters into those abilities, but it isn't the most important part. ◘

### Resources


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# Graphic Images and Successful Spelling

Azalia S. Francis

Writers frequently pause during the composing process to comment, "That word doesn't look right." Did you ever wonder what makes a correctly spelled word look wrong to a writer? What prompts a writer to recognize that a conflict exists between the representation of a word on paper and the visual memory of the shape of the word and its sequence of letters?

The ability to recognize words has its origin during initial spelling instruction and continues through adult life. Seymour, Harris, and other authorities in the field of human visual perception offer possible answers to these questions. Their solutions relate to the teaching of spelling using proper graphic symbols.

The quality of the graphic symbol exerts a significant influence on a person's ability to acquire, retain, and reproduce the image of a word. Quality can be defined as the size, shape, consistency, and spatial presentation of the letters in the word. Successfully learning to spell a word is dependent upon these four qualities of the graphic symbol.

### Size

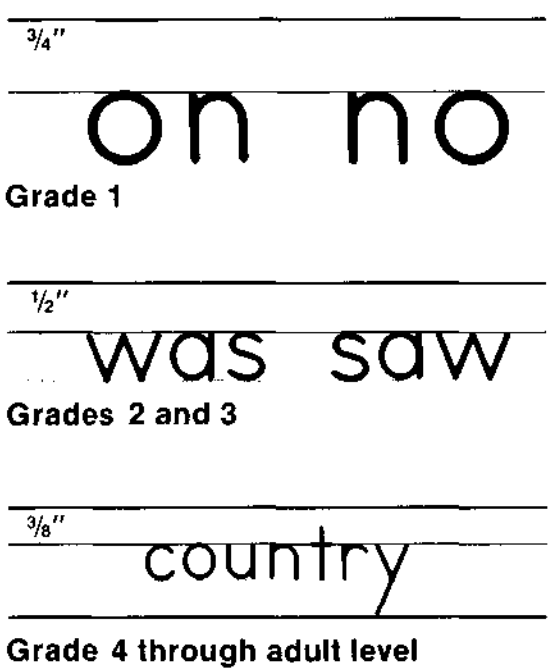
When a student first attempts to learn to spell a new word, it makes sense for the size of the graphic representation of that word to be the same as the size of the word the learner is expected to write. The logic behind this practice is clear: the fewer variables the learner has to contend with, the better. If the size is constant, the learner can concentrate on other features of the word. Ideally, then, the initial learning of spelling should be based on word models that are presented in exactly the same size as the words the person is supposed to produce during composition.

The size of the spelling word models varies with the grade level. Children at the readiness level should work with letters that are one and a half inches in size. First graders should have three-quarter-inch word models. In grades 2 and 3 children should see one-half-inch models. From grades 4 through adult level, the word models should be three-eighths of an inch in size.

### Shape

The shape of the model from which students learn to spell should be the same as the shape of the words they are expected to write. Again, the rationale is to reduce the number of variables on which the learning task is based. Learning to write or spell is easier when the models are identical to the words the child or adult is expected to produce.

The importance of the shape of a word can be seen by examining "spelling demons." Students often confuse "look-alike" words and misspell them often enough for the words to be considered spelling demons. *County* and *country* are look-alike words, as are *there* and *their*. Other spelling demons are the reversed look-alike words such as *was* and *saw*, or *on* and *no*.




### Consistency

Consistency in the presentation of spelling words enhances the student's retention and ability to reproduce the symbols that are used to construct a spelling word. The use of several orthographies—one for handwriting, another for reading, a third for chalkboard writing, and a fourth for posters—could create difficulty for the learner. Having the student write using a cursive style before he or she has acquired basic reading skills could produce some degree of perceptual malfunctioning, possibly ranging from simple unease and vague discomfort to actual dyslexia. There is an even greater chance for creating spelling difficulties. Giving students the instructional support of consistent graphic images

certainly provides a more favorable climate for developing successful spellers with the ability to encode words efficiently.

### Spatial Presentation

The spatial presentation of the word is the fourth critical quality of the graphic symbol in spelling instruction. Positioning a word on a baseline, preferably a red baseline, provides the student with two support devices. The student can isolate the word and thereby separate it from surrounding symbols that might be distracting, and can use the baseline as a guide from left to right and as a cue to the proper sequence of letters.

Not only should the writing paper have a baseline, it should have a midline and headline as well. These additional reference lines form configuration limits for the word model, permitting the student to see the word with its distinctive visual features.

### Summary

The adult who writes a word, looks at that word, and says, "It doesn't look right," is verifying an observation that perceptual psychologists have recently made: the visual image of a word contributes to its retention. Clearly displayed word models, therefore, contribute to correct spelling.

Conversely, learners who are exposed to faulty graphic symbols may find it difficult to learn to spell. If the initial presentation of the word is through a model that is small, misshapen, inconsistent, and improperly positioned in the writing space, the word will be hard to learn. The writer will be less able to acquire, retain, and reproduce the word; and not only will the word not "look right," it probably won't be spelled right. ◘

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# Word Processing and Spelling Checkers


Michael N. Milone, Jr.


Every school child's dream is a magic pencil that has all the answers. When you do an arithmetic problem with the magic pencil, your answers are always right. And when you take a spelling test with the magic pencil, your words are written legibly and are spelled correctly.

Magic pencils don't exist, but we do have the next best thing: a computer equipped with word processing software and a spelling checker. This combination of hardware (the computer) and software (the word processor and spelling checker) is unbeatable when it comes to taking the drudgery out of writing.

Word processing software makes a computer a very sophisticated typewriter. You enter text using a standard keyboard, but instead of recording each character on paper, the computer displays the characters on a television monitor. Because the image of the letters and words is recorded electronically, it is an easy matter to add or delete characters, move passages of text around the screen, and perform other marvelous feats that are difficult and time-consuming when done with a traditional typewriter. You are, however, responsible for editing the document, and the finished product will still reflect your own spelling abilities, that is, unless your word processor comes equipped with a spelling checker. Depending upon how sophisticated your spelling

checker is, it will find misspelled words, suggest correct alternatives, and even replace erroneous words automatically.

A spelling checker works on a very simple principle. The computer identifies each word in the document and then compares it with a dictionary of thousands of words that is part of the spelling checker. If the word matches any entry in the dictionary, the word is considered correct and the computer goes on to the next word in the document. If the word does not appear in the dictionary, it is flagged as being misspelled.

If a spelling checker has the capability of suggesting correct alternatives, each misspelled word is compared with a second list that contains common misspellings. If the word matches one of these, a correct alternative is selected. There may be several correct alternatives for each word that has been identified as being misspelled. For example, if you type the word *theer*, the computer would flag the word as incorrect and suggest *there* and *their* as correct alternatives.

By now you have probably come to at least three conclusions about spelling checkers. First, they must be slow. After all, comparing each word with a dictionary that comprises thousands of words seems like a terribly time-consuming task. This conclusion is incorrect because this kind of task just happens to be one of the things that a computer does well and quickly. It takes only a few thousandths of a second for a computer to check each word, so most documents can be verified in a matter of minutes.

A second conclusion is that the effectiveness of a spelling checker is limited by the size of the dictionary. This conclusion is true, because the larger the dictionary, the fewer "false negatives" that will crop up. A false negative is a word that is flagged as being spelled incorrectly, when in fact it is correct but is not contained in the dictionary.

The third conclusion is that even with an immense dictionary, there will still be times when a spelling checker will not catch an error. This conclusion is also true. Homophones, words that sound alike but are spelled differently and have different meanings, are especially problematic and are the source of many spelling errors. *Their* is often substituted for *there* and vice-versa, and a spelling checker will never flag this error because both words are in the dictionary. Similarly, spelling errors often produce a second word that is spelled correctly but is not the same as the initial word. For example, substituting *e* for *a* in *read* produces the valid word *reed*. Omitting *w* from *write* produces *rite*, and adding *p* to *soon* results in *spoon*. None of these errors would be identified by a spelling checker.

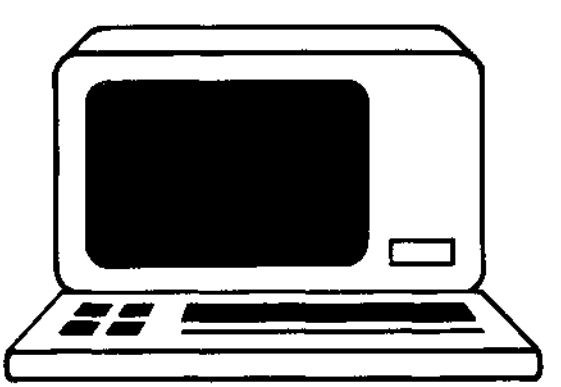
Despite their shortcomings, spelling checkers are certainly a great writing aid. They often catch the subtle errors most of us miss (*thier* for *their*), and bring quickly to our attention the obvious bloopers. Perhaps the greatest benefit of a spelling checker is that it takes care of so many of the superficial aspects of spelling correction that more effort can be devoted to writing clearly and creatively. And anything that improves the writing process should surely be encouraged. □

There is no doubt that adult writers can benefit from the use of a spelling checker. With children, however, this conclusion may be premature. There has been no research reported on the effect of the use of a spelling checker by school-age children. Such research is of critical importance, because a spelling checker seems to possess great potential for both enhancing and diminishing spelling ability.

On the one hand, a spelling checker is an efficient and nonjudgmental means by which students can evaluate their own spelling ability. They may respond by paying more attention to their spelling in an effort to "beat" the computer. They may also develop the habit of routinely editing their work, simply because calling a spelling checker into play requires students to engage in the editing process. Both of these outcomes will improve a student's spelling conscience.

On the other hand, a spelling checker may make students lazy. They may spell less precisely because they know the computer will correct their errors, and they may use the spelling checker so mechanically that they fail to acquire editing skills themselves. The end result will be a diminishing of students' spelling ability.

How students react to the use of a spelling checker will depend in large part on the kind of instruction and encouragement they receive. It seems reasonable to assume that well-trained and enthusiastic teachers will foster in their students a constructive attitude toward spelling checkers, just as they have done with calculators. Since most teachers fall into this category, we believe that spelling checkers will in fact improve students' spelling ability.



# For Parents

"Young children are learning to spell long before they receive any instruction. They come to school and to writing with an impressive array of knowledge about our language," says Dr. Linda L. Lamme, Professor of Early Childhood Education and author of **GROWING UP WRITING**. Her book was written in cooperation with *Highlights for Children*, the respected children's magazine.

Dr. Lamme offers parents insights into how children develop as writers and gives practical ideas for introducing writing activities in the home so that the whole family can enjoy writing together.

The following outline of the levels of spelling development prior to formal instruction appears in Dr. Lamme's chapter on spelling.

**GROWING UP WRITING** is published by Acropolis Books Ltd., Washington, DC.

**Spelling Progressions**

*Level I*
Spelling Awareness
- Words are made up of alphabet letters.
- Spelling is consistent; words don't change the way they are spelled.
- No matter who writes a word or what type or print is used, the word is spelled the same way.

*Level II*
Primitive (or Deviant) Spelling
- Random letters represent words.
- There is no relationship between spelling and the word it represents.
- Numbers and alphabet letters are differentiated.

*Level III*
Pre-Phonetic (Consonant) Spelling
- The initial consonant or a few consonants represent the whole word.
- Some consonants match their sounds.
- The spelling is very hard to read, but decipherable if you know the code.
- Initial and final consonants become correct.
- Some initial and final blends become correct.
- Longer words have longer spellings.

*Level IV*
Phonetic Spelling
- There is an almost perfect match between letters and sounds.
- Some sight words are spelled correctly.
- Overgeneralizations occur.
- Some vowels are used as markers, but are often incorrect.
- A passage is rather easy to read.

*Level V*
Transitional Spelling
- Words look a lot more like English.
- More vowels are used.
- Common letter patterns, such as *oo, ou, ng, igh,* and *ck* appear, but not always in the right places.
- Inflectional endings such as *ed, ing,* and *s* appear.

*Level VI*
Correct Spelling
- The child is ready for formal spelling instruction.
- Most words are spelled correctly except for individual words which need to be practiced.

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# Readers' Forum

## Spelling Reform and Computers

The following is an excerpt from a letter to *Spelling Progress Quarterly* from Fred Haibach, Columbia, MO.

Just last year, a government appointed committee assailed the quality of U.S. education. One of the committee's recommendations was to increase the number of hours students spend in classrooms. Rather than risking an uproar over longer school hours from students and parents, shouldn't we offer to them spelling reform as a means to free time? Wouldn't it be wiser to invest some of the time currently wasted on the mastery of cumbersome spelling into other more productive areas, such as science and math?

Most importantly, the computer age has arrived. Computers will soon be in every classroom and will be affordable for most homes which now enjoy television sets. These machines will be extremely valuable for reform.

Today, computers memorize whole dictionaries and can find simple spelling mistakes. Why couldn't they transcribe a text from conventional to phonetic spelling? It is "easy as pie" say the experts. Imagine a businessman typing a letter in his time-worn manner. A push of a button would reprint the letter transcribed into phonetic spelling. Even better, he receives a letter in phonetic spelling which he does not intend to learn. His computer can scan the text with a special device and transcribe it into conventional spelling for his perusal and his files.

Let us think again of the classroom where we someday hope to teach phonetic spelling. The poor student started in the old system will have his burden lightened by a computer that displays both spellings side by side. The possibilities are myriad.

Our libraries of the future will be electronic. Gone will be the endless shelves with dusty volumes reeking of old paper. While the grey-haired professor, in the days to come, reads *Oliver Twist* in an antiquated spelling or even Shakespeare in the original spelling, the young student next door reads the same text in reformed spelling, perhaps a bit faster than his teacher.

Computers are here to ease us into spelling reform. Let us not be afraid. Spelling reform is no longer a bitter pill.□