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Spelling Instruction in the Writing Center

Linda F. White

Despite the advent of computerized spelling checkers, being a poor speller is still a significant burden for a writer. Spelling errors are stigmatizing, considered a mark of illiteracy both in academia and in business. Occasions for spelling errors are far more frequent than are opportunities for other errors, and misspellings are more noticeable. Relatively few readers respond to comma splices or dangling participles, but virtually everyone reacts to "dosen't" or "stuped" or "thair." For the poor speller, writing, particularly in impromptu situations, is a gamble; spelling errors always threaten to sabotage the communication. Since spelling instruction is usually not part of the first-year composition curriculum—even in a basic writing course, only some students will be poor spellers—assistance with spelling problems should become a regular part of a writing center program; it may be the only resource available to students who need help.

While text-based or programmed instruction is the easiest form of assistance to offer, it is generally ineffective. In a 1984 *Writing Center Journal* article, I. Y. Hashimoto and Roger Clark analyze the shortcomings of college spelling texts, which teach phonics and syllabification, and have students memorize rules and exceptions—despite research findings that question the efficacy of these methods. Textbooks oversimplify; there is little match between the activities they provide and the actual problems writers face in controlling spelling during the process of composing ("Texts" 1-3).

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Rather than depend on textbooks, a writing center needs a staff member who is familiar enough with research on how spelling proficiency develops to analyze students' difficulties and to offer a short course or workshop on spelling improvement that treats spelling problems as part of the writing process. For those who would like to develop such a course, this article provides a brief introduction to recent research in spelling, suggestions for further reading, and a description of a writing center spelling workshop.

The Nature of English Orthography

Much has been made of the difficulty of English spelling, of the confusion caused by the fact that it is not based on a simple sound-to-symbol correspondence. George Bernard Shaw insisted that English spelling is so unpredictable that *fish* might be spelled *ghoti: gh* as in *rough*, *o* as in *women*, and *ti* as in *solution*. Other proponents of spelling reform attack the capriciousness of English spelling as the root cause of illiteracy. Research conducted at Stanford University during the mid-sixties demonstrated that English orthography is neither entirely predictable, nor as random as Shaw and the spelling reformists claim. Hanna maintains that, "contrary to traditional viewpoints, the orthography is far from erratic. It is based upon relations between phonemes and graphemes—relationships that are sometimes complex in nature but which, when clarified, demonstrate that American-English orthography, like that of other languages, is largely systematic" (Hanna et al. 83). Shaw's bizarre representation of *fish* actually serves to illustrate the regularity of English spelling; *ghoti*, even for a poor speller, is not a reasonable hypothesis for fish because it ignores rules of position and stress that are part of the system. It is true that *gh* represents the sound of *f* in *rough*, but it never represents that sound at the beginning of a word, and the letters *ti* are an alternative to *sh* only in medial positions. In the Stanford experiments, researchers discovered that a computer programmed with rules for phonetics, position, and stress was able to generate the correct spellings of approximately 49 percent of a core vocabulary of 17,000 words. As might be expected, the computer could not be programmed to predict such spellings as *eye, pizza, one, two, guitar, does*. Nor could researchers devise an algorithm to spell long vowel phonemes correctly. In words like *pail, break, pale, bay, they*, and *weigh*, no phonetic or positional rule governs the choice entirely, although some patterns are more common than others.

The fact that English spelling is not entirely phonetically regular does not mean that it is chaotic; rather, it is based on other patterns and principles.

The most significant way English spelling deviates from phonetic correspondences is in reflecting the meaning and derivation of words. The past tense marker *-ed,* for example, is pronounced in three different ways, as in *stopped, begged,* and *loaded.* But since the three sounds have the same meaning, they are spelled *-ed.* English spelling also retains the history of the language. Words that have similar roots are spelled the same way, reflecting lexical relationships even where pronunciation has changed over time. The *g* in *sign* is phonetically puzzling but predictable because of the semantic relationships among *sign, signal, signature, resignation,* and the like.

In sum, English orthography is fairly complex. Its base is alphabetic; there are many one-to-one sound-to-symbol correspondences. There are also more complicated patterns, involving rules of position and stress. A part of English spelling is not predictable and does require exposure and memorization. And a large part of spelling ability is closely tied to knowing what words mean.

The Development of Spelling Ability

How this system is learned is still the subject of speculation among cognitive psychologists. Researchers disagree on such basic issues as whether our spelling memories consist of a single template for each word or multiple representations of the same word (Brown 488). In *Cognitive Processes in Spelling,* Uta Frith notes that "the most tantalising question still open is how spelling ability is learned and improved. . . . research results are mostly not yet at a stage where they can be applied" (5). However, what is known about language learning discredits the behaviorist approach that underlies most spelling instruction. The dominant mode of instruction in spelling, as Hashimoto and Clark's review of textbooks shows, is to drill students on rules, as if they were computers needing to be reprogrammed ("Texts" 1-3).

Persistent as it is, this approach is flawed. Teaching spelling rules assumes that a writer at the point of composition will sort through the rules he or she knows, select the most appropriate one, and then apply it, in order to generate one correct spelling. This model does not describe what proficient spellers do. The sheer number of rules that need to be mastered, along with their complexity, makes their use impractical. J. N. Hook's *Spelling 1500,* for example, consists of 85 units, including one on words ending in *-yze* or *-ize,* another on *-ery* or *-ary,* two on dropping final *e,* two on keeping final *e,* four on words ending in *-ence* or *-ent,* and so on. Roloff and Snow (109) need four rules to clarify the choice between *-able* and *-ible—* four rules to make one choice in one set of words. It has been argued that poor

spellers need rules as an aid because they cannot do what proficient spellers do, but the proposed crutch seems more baggage than tool. The conscious application of rules is practical only if it happens rarely and with very few rules. The rules are accurate, perhaps even elegant, providing as they do an explicit formulation of complex patterns. But they are not useful. The conscious application of rules does not account for our production of correct spellings.

What does account for the proficiency in spelling that many English speakers acquire is the same language-learning mechanism that allows toddlers to master spoken language. According to current psycholinguistic theory, learning to spell, like all language learning, is not a simple matter of memorization or stimulus-and-response reinforcement, but a consequence of our innate ability to discern patterns as a function of experience with language.

Some of the most important advances in understanding this process have been made by linguist Charles Read, reading specialist Edmund Henderson, and several of Henderson's doctoral candidates, whose research is based on observing what they call "creative" or "invented" spellings, the spellings devised by preschoolers and first-graders who have not yet learned to read. These invented spellings, which represent the child's hypotheses about reasonable ways to represent speech sounds, provide a fascinating body of data on how the human brain masters the complexities of language.

One of the early stages of invented spelling is phonetic spelling, in which children match the sound they hear with the letter of the alphabet that has the same sound in its name, for example., *are* is spelled R, *you* is U, *rescue* is RESQ, *eighty* is ATE. At this stage, children make phonetic distinctions in their spelling that adults no longer hear because they are literate, more in tune with graphemic realities than with phonetic ones. Read found that children who invent spellings write CHROK or CHRAC for *truck*, AS CHRAY for *ashtray*, CHRIBLS for *troubles*, CHRIE for *try*, JRAGIN for *dragon*, JRIV for *drive*. These spellings look random to an adult, to whom it is axiomatic that *truck* begins with a *t*, drive with a *d*. That perception is based on reading, not hearing. The initial sounds in *truck* and *tick* are not identical; the *t* in *truck* is an affricate, similar to the initial sound in *chuck*. Because the affrication of *t* next to *r* is predictable, the difference between the initial sounds of *tick* and *truck* is not represented in our orthography. Nor are the initial sounds of *dragon* and *dive* identical, as the invented spelling of JRAGIN recognizes. On the basis of their experience with print, literate adults are convinced that both sounds are the same; non-readers hear and represent the difference.

Another revealing characteristic of invented spelling is the treatment of nasalized vowels in words like *angry* and *hunt*. Children's invented spellings often omit the *n* before consonants, but not the *n* before vowels: MOSTR (*monster*), PLAT (*plant*), AD (*and*), AGRE (*angry*), NUBRS (*numbers*). Phonetically, these spellings are accurate; the sound of a nasalized vowel is not identical to the sound that begins *not* or *never*. Similarly, invented spellings are more phonetically accurate than standard spellings in placing vowels in stressed syllables but not in unstressed syllables: LITL (*little*), CANDL (*candle*), WAGN (*wagon*), and EVN (*even*), and in representing intervocalic flaps as voiced rather than unvoiced: LADR (*letter*), WOODR (*water*), BEDR (*better*), PREDE (*pretty*) (Read, *Categorization* 52-64).

These examples illustrate what it means to have tacit knowledge and how it is that we can learn things about spelling that we are not explicitly taught. Literate speakers who think that *dragon* and *dive* begin with the same sound (or that *no* and *own* have the same sounds) are following spelling rules. Because the rules are not conscious, they feel they are observing a simple sound-to-symbol correspondence. The patterns found in invented spellings show that children have already mentally organized speech sounds. If they had not, their creations would be random. Children abstract and categorize the sounds they hear without being taught to do so. The same ability is the basis for learning standard spelling except that in learning to spell, the relevant experience is exposure to written rather than to spoken language. Children learning to spell are not blank slates on which knowledge is inscribed. Rather, the task of learning standard spellings is one of replacing tacit knowledge of phonetic patterns with tacit knowledge of graphemic patterns.

Given sufficient exposure to print, this transfer takes place in a normal developmental sequence. As children learn to read, their invented spellings begin to change. For example, at first they make a spelling distinction that matches the three different sounds of the past tense marker. But gradually these different spellings begin to disappear as children internalize the concept that spelling represents meaning as well as sound (Read, *Categorization* 65-68). Typical growth toward standard spelling can be seen in these successive approximations: MOSTR, MONSTOR, MONSTER; ATE, EIGTY, EIGHTY; LUVATR, AELUVATER, ELEVATOR; LFT, ALAFAT, ELEFANT, ELEPHANT (Gentry and Henderson 117; Henderson, *Learning* 34).

This research has important pedagogical implications. Since spelling is not an isolated, mechanical skill, it is best learned as part of a curriculum that

engages children in worthwhile reading and writing activities; children who are involved in reading and writing will search for and find order in written language in the same way they find order in spoken language when they learn to speak. Learning to spell is a gradual process of mastering complex patterns and depends less on memorization than on experience:

> Correct spelling is not learned by sheer memory nor is it learned mechanically from rules. Our research suggests instead that some underlying abstract orderings are gradually acquired as a function of developing intellectual maturity and a prolonged experience with written language. . . . Knowledge of this kind can be conceived of only as tacit knowledge; it cannot be taught directly or expressed concretely at any of its stages. (Henderson, *Learning* 95-96)

The research also suggests that two facets of traditional instruction do more to hinder than aid the development of spelling ability. The first, an overemphasis on phonetics, gives students misleading information. Children who have difficulty spelling a word are often told to listen more carefully and spell the sounds they hear. In truth, they are listening carefully and need to learn to abstract further, to stop attending to some phonetic differences, in order to categorize sounds the way the written system does. "When children spell PUP (or POP, or whatever) for *pump*, there is probably nothing wrong with their hearing . . . they do not regard the "missing" sound as being the same as that at the beginning of *my*. Furthermore, they do not immediately alter their spelling when you pronounce the word as 'pummmp'" (Read, *Categorization* 115-116). Instead of telling students to listen more carefully, teachers should help them make the transition from attending to phonetic patterns to attending to graphemic ones.

Instruction also fails when it insists too early on correct spellings and thereby short circuits the process of experimentation that allows the child to make the patterns of written English his or her own (Gentry 7-10). Teachers fear that leaving spelling errors uncorrected will reinforce bad habits. Again, the behaviorist model is deceptive. As they gain experience, children self-correct their limited or incorrect generalizations in the same way that they learn to say "went" rather than "goed" as they master grammar. Mistakes are best seen as necessary experiments. Too early an attempt to be correct forces a child to depend on rote memorization and direct copying, which are inefficient ways to learn.

Teaching Spelling to College Students

Why learning to spell is effortless for some and tortuous for others is not entirely clear. If all poor spellers were poor readers, their difficulties could be explained by their lack of experience, since spelling knowledge is so closely related to the development of other reading and writing skills. But many poor spellers are quite literate. Uta Frith's hypothesis is most convincing. She believes that there are two different but equally effective strategies for reading. One type of reader uses full cues, absorbing details as he or she makes global predictions. The other type of reader relies on partial cues; since written language is redundant, it is possible to determine meaning without absorbing letter-by-letter detail. Readers who develop the latter strategy are more likely to have difficulty with spelling (505-507).

It is also not clear to what extent remediation is possible, or whether disabilities are innate or learned. Not all spelling disabilities are incurable; as case studies show, some are simply the result of poor teaching (Gentry 11-25; Henderson, *Learning* 135). On the other hand, neither intelligence nor effort guarantees success. Richard Gentry's history as a poor speller, which he recounts in *Spel . . . Is a Four-Letter Word*, is instructive. Gentry made perfect scores on spelling tests throughout his elementary school career, winning third place in a county spelling bee in eighth grade. His test-taking expertise was the result of many hours devoted to memorizing word lists. His writing, flawed with misspellings like "becase" and "stoped," belied his success (5-6; 42-43). And although he is now an expert on how spelling is learned, he remains a poor speller, as does Henderson (Gentry 25; Henderson, *Learning* 32).

Given these uncertainties, it is unreasonable for a college-level remedial program to attempt to transform poor spellers into good ones. Remedial instruction for children can teach them how to learn so that they can profit from the years of experience that are still ahead. College students no longer have years of schooling ahead and need immediate help in dealing with their spelling problems. Thus, a more reasonable goal for remediation in college is to enable poor spellers to cope with their difficulty. Such a goal is not pessimistic; there are many things poor spellers can learn that will improve their writing performance.

At the writing center that I direct, spelling instruction is offered in a four-session workshop. The first lesson of the workshop is affective: through discussion, students are encouraged to see that being a poor speller is a frustrating but not insurmountable problem. This lesson is necessary because the emotional legacy of being a poor speller is a significant barrier to learning.

Poor spelling seems to win a disproportionate share of scorn from which few poor spellers escape unscathed. Gentry, a model of diligent pursuit of spelling knowledge, tells an ironic story about being berated by a college professor for making so many spelling errors on an exam essay; according to the professor, anyone so intelligent who couldn't spell must be lazy (5). A fellow writing center director who is a poor speller recalls being so angry about spelling during her college years that she refused to proofread, preferring to take lower grades than to confront her errors. All of the students I have worked with in spelling workshops have had similar experiences. It is important for them to hear that a poor speller is not necessarily unintelligent, illiterate, or morally defective.

One way to structure this discussion is to have students apply a problem-solving heuristic to spelling. In problem analysis, one identifies and contextualizes the problem, analyzes its causes, and evaluates alternative solutions to find the most promising. In helping students to identify why spelling is a problem, I note that some apparent problems are not worth solving, that it is best to see problems in context to determine whether they interfere with important goals. Given this prompt, students begin to redefine spelling problems as writing problems. It doesn't take long to establish that misspellings are problems because they bother readers, who (perhaps wrongly but nonetheless inevitably) then misjudge the writer's intelligence or careful-ness. Students also begin to consider how spelling interferes with composing. They realize, some for the first time, that the coherence of their arguments suffers when they pause to look up or try to remember a spelling and that their syntax suffers when they recast a sentence to avoid words they don't know. Their speculations about the causes of their problems with spelling are predictable: some suspect dyslexia; others complain that English spelling is impossible; most blame their teachers. When the discussion turns to possible solutions, students are at a loss. Most have had no instruction in spelling beyond having their errors marked and being told to use a dictionary. These problem-solving sessions are unusually energetic, perhaps because students have had few opportunities to talk non-judgmentally about spelling. Stu-dents are eager to share their experiences and eager for suggestions. It is salutary for them to have the opportunity to discuss their problems with others who share them.

Another major focus of the workshop is to provide the opportunity for self-assessment. Since most poor spellers are ashamed of their inadequacy, spelling is generally an area they have avoided examining; they know that they can't spell, but they know little about the specific nature of their difficulties. As part of the workshop, they begin to explore their habits and skills: what

percentage of words they typically misspell, whether they misspell words in the same or different ways, what words they misspell. An important part of this assessment is having students analyze their spelling errors, classifying them according to type. The chapter on spelling in Mina Shaughnessy's *Errors and Expectations* provides a model for this analysis, although I have found a simplified version with fewer categories more practical than the one Shaughnessy gives. Students collect their errors (from essays, journals, notebooks, etc.) and enter them on a chart in which each error is classified according to type, for example, long vowel sound, short vowel sound, missing letter, silent -*e*, homophone, double consonant. As Shaughnessy points out, poor spellers are often convinced that their errors are "infinite and unpredictable." Cataloguing their own errors not only gives them insight into how the spelling system works, but helps them to see that their errors form patterns and thus are not unmanageable (175-177). A further application of error analysis is described by Hashimoto and Clark. Their students take a spelling inventory containing high-frequency vocabulary and then use the misspelled words thus identified to create personalized dictionaries. By using their own dictionaries when they write, students become more familiar with words that are likely to be problems for them and so find them easier to recognize ("Program" 34-35).

Above all, poor spellers need to find out whether they can proofread for spelling errors. I ask students to take an ungraded draft and mark the words that they think are misspelled; we can then calculate whether they doubt too much or too little. Some students who initially identify their problem as being unable to discern spelling errors in a draft find that they are good at it. That they have not made this discovery previously is not, I think, a sign of dishonesty or laziness, but a consequence of the way writing instruction is organized. So much writing is done under time constraints that poor spellers get a great deal of experience in finding out that they don't catch mistakes. Each time they get a paper back with spelling errors marked by someone else, that conviction is reinforced. Although my evidence for this assertion is anecdotal, I believe that the reason many poor spellers don't proofread is that they don't know that they can; their experience has convinced them not to try. Once they find out that they can proofread, they do. Teaching students how to proofread has been responsible for the spelling workshop's most impressive successes: in the space of a few weeks, some students reduce the number of errors in a paper from ten or fifteen to two or three. Unhappily, others find that they do not proofread efficiently. Usually, the problem is not that they fail to identify words that are misspelled but that they doubt everything. I once observed a workshop participant spend two hours

proofreading a 500-word paper. That even with such extraordinary effort he failed to correct some of his errors is understandable: two hours spent at such a tedious task is likely to make one's attention lapse.

Students also need instruction in using the tools that can help them deal with being poor spellers. Word processors with spelling checkers and pocket-sized electronic dictionaries are a great boon to a poor speller if he or she becomes proficient in their use. Students need practice in using spelling checkers and need to become aware of their limitations: computers cannot diagnose homophone errors; they sometimes flag words that are not incorrect; their use requires the ability to select the correct spelling from a list of choices; the correct choice may not appear in the list. Students also need instruction in using dictionaries; typically, they have no plan for what to do if a word is not where they expect to find it. How can you look up a word, they ask, if you don't know how it is spelled? Their frustration with dictionaries stems from and reinforces their conviction that spelling is impossible. The strategy of considering possible alternative spellings needs to be introduced and practiced. Group brainstorming sessions are productive. ("If you think a word is spelled with an *e*, and it isn't, what are some other possibilities?" "If *else* isn't under 'elce' where else could you look?" "What other spellings of 'atention' are possible?")

Mnemonic devices, like those described in Harry Shefter's *Six Minutes a Day to Perfect Spelling*, are another tool for poor spellers. Although Shefter's spelling program is ill-founded—he overemphasizes the extent to which spelling ability depends on memorization—his suggestions for how to memorize are more efficient than the serial rehearsal strategies that students often use. Shefter recommends learning to spell by using visualization, associative recall, and practice tracings to make the spelling of a word automatic (9-28). The utility of these devices is more limited than Shefter admits, but they do provide quick results and are thus useful in learning unfamiliar terms in preparation for an exam or for gaining control over a small number of words.

Finally, students need a better understanding of how English spelling works. Henderson provides word sorting tasks that help students explore the patterns of written English. In one exercise, for example, students are asked to first sort a list of words containing *oi-* or *oy-* (*soil, toy, rejoice, boycott*, etc.) and then determine which pattern occurs more frequently in the middle of words and which at the end (*Teaching* 53-70). Workshop students also explore the principle that spelling is related to meaning by examining word pairs like *miracle* and *miraculous, medical* and *medicine, narrate* and *narrative*, and by practicing using lexical relationships to solve spelling problems. One

student with whom I worked on a draft, Luke, had spelled *competition* as "compitition." I explained that unstressed syllables generally give no phonetic clue to how the vowel is spelled, but that sometimes a related word will. Luke supplied *compete* as having the same meaning and changed the *i* to an *e*. We had gone on to discuss other issues in the draft when Luke looked at another paragraph, pointed to his spelling of "challanging" and asked, tentatively, if the word were related to the name of the space shuttle, which, being a NASA buff, he knew how to spell. The connection between "Challenger" and "challenging" may seem obvious, but some students' experiences either don't lead them to make the discovery or don't make it relevant to the problem of how to spell a word. Thus, the importance of studying patterns is that it helps to demystify spelling. Most poor spellers seem to be working from the underlying hypothesis that spelling is phonetic. Viewed from this perspective, the way words are spelled seems a bewildering array of irregularities and exceptions. Understanding that there is a system to spelling does not solve all spelling problems, but it does make students less confused and discouraged; spelling no longer seems impossible.

For those students who are interested, the writing center also offers semester-long tutorials on the spelling system. Student and tutor work through the eighth-grade volume of Henderson's elementary school spelling series. I do not, however, try to convince students to engage in an extended course of study. In part, this decision is pragmatic; in the past, many students who have begun spelling programs have discontinued them when their course assignments became pressing. But my main reason for favoring the workshop approach is that I am not sure that a longer course of study would actually return greater benefit. With beginners, long-term, formal word study might produce the tacit knowledge of the system that good spellers intuit. But college students are not beginners, and it may not be possible for an adult to actually re-structure the way he or she organizes word knowledge. Despite the grandiose claims of many remedial spelling texts, I have never met anyone who reports having been transformed from a poor speller into a good one. I have met poor spellers whose written work does not reveal their disability. But they do not have the same facility in transcription that good spellers take for granted. They are successful writers who have learned to cope with being poor spellers. Producing such writers is the goal of the workshop.

Conclusion

Teaching spelling to college students is more rewarding than one might expect. Spelling, like other "basic" skills, appears simple only when it is

unexamined; watching poor spellers make discoveries is fascinating. And spelling research is interesting for the light it sheds on teaching writing. The literature on teaching spelling provides some of the clearest examples of the difference between behaviorist and cognitivist paradigms and of the special problems teachers face when much of their own knowledge of a subject is tacit. Picture the teacher confronted with a child who spells truck with a "ch." A teacher with a commonsense understanding of language uninformed by linguistic research might easily err. One wonders how many poor spellers have been created by formal education. The most successful students may be those who learn to ignore instruction when it conflicts with experience, to act on the hypothesis that one's teachers mean well but often don't tell the truth.

Perhaps fewer college students would need remedial instruction in spelling if more teachers applied psycholinguistic research on how spelling is learned. But saner methods of instruction seem unlikely in this era of measurement and accountability. The pressure to document achievement will keep teachers marking first- and second-graders' spelling errors and testing their ability to memorize. The demand for spelling instruction in the writing center is likely to continue.

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NOTE: The single best overview of research and theory on the development of spelling ability is Edmund Henderson's *Learning to Read and Spell.* Also recommended as introductory readings are Gentry's *Spel . . . Is a Four-Letter Word,* the two articles by Hashimoto and Clark, Dobie's "Orthographical Theory and Practice" and Anderson's response, and Uta Frith's chapter in *Cognitive Processes in Spelling.* Additional references of interest to writing center teachers are listed below under "Works Consulted." Useful literature on teaching spelling at the college level is not easy to find, since most psychological research is too narrowly focused and most spelling pedagogy is designed for young children.

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