

FLY Through™ Spelling

A Brief Educational Rationale

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The Research Basis for the *FLY Through™ Spelling System*: A Brief Educational Rationale

“The public wants schools to take spelling instruction seriously.”

—Ronald Cramer, *The Spelling Connection*

INTRODUCTION

Ronald Cramer, one of the nation’s leading experts in the teaching of spelling, makes a good point: to many Americans, spelling symbolizes literacy. “Make a spelling error in a public setting and your level of literacy, even your intelligence, will be called into question.” (1998, viii). Just a few years ago, a vice president of the United States misspelled potato, and the inferences drawn were: “not very smart,” “not very literate.”

Folk inferences about the intelligence of persons who spell poorly are not supported by empirical studies (Pérez González 1978, Pérez Cañado 2003). For example, Pérez Cañado conducted an investigation of alternative spelling pedagogies. Using successive discriminant analyses, none of the moderator variables considered in her research—verbal intelligence, motivation, and academic performance in the curricular areas of English, Spanish language and literature, mathematics, and science—accounted for the differences observed between the orthographic (spelling) performance in English of the experimental and control groups.

In spite of this good news, even the most prestigious writers of this century lament their lack of spelling prowess. In a passage on page 174 of *Living to Tell the Tale* (2004), Gabriel García Márquez writes:

“In the midst of so much excessive dynamism, I still do not understand why my teachers concerned themselves so much with me but did not cry out in horror at my bad spelling. Unlike my mother, who hid some of my letters from Papa in order to keep him alive, and returned others to me corrected, at times with her compliments on my grammatical progress and good use of words. But at the end of two years there were no improvements in sight. Today my

problem is still the same: I never could understand why silent letters are allowed, or two different letters with same sound, and so many other pointless rules.”

So, with intelligence aside, what does it mean “to be able to spell”? And why is English spelling so complex and difficult to learn? Furthermore, what can be done about it?

To Spell: A Definition

It is probably best to begin any discussion of why learning to spell in English is so difficult and what to do about it with a clear definition of what it means to be able to spell:

“To name or write in order the letters constituting a word or part of a word. (*The American Heritage College Dictionary, 4th edition*)”

The definition seems pretty straightforward. But, as it turns out, the English language that we speak “is a mixed language composed of German, Danish, Norman French, Church Latin, classical Latin, and classical Greek” (Henderson 1990). So says Edmund Henderson, the well-known author of *Teaching Spelling*, published by Houghton Mifflin almost two decades ago. Henderson continues, “To this strange mixture have been added words from the four corners of the globe—Arabia; India; and the Americas, both native and Spanish; Polynesia; Russia, and even Tibet” (1990, 8). Interestingly, Henderson delights in the idea. The mixture, he concludes, fits English well because it serves as an international language. English today is read as a first or second language by more than half the literate population of the

world; it is not a narrow or restricted language, but “one that is rich in vocabulary and well suited to a diverse country such as ours” (Henderson 1990, 7).

Further Reasons Why Learning to Spell in English Is So Difficult

As it turns out, the very thing that makes English so rich—its heritage, or its “mixture”—makes learning to spell English very, very hard. Richard Venezky, certainly one of America’s most renowned scholars of English orthography, explains: “[A]s every schoolchild knows, English spelling is not simply the mirror image of English reading. Some letters have two or more pronunciations, and each of these pronunciations often has two or more other spellings, leading to a spaghetti-like tangle that defies two-dimensional representation” (1999, 11). (Exactly Márquez’s issues, interestingly enough.) Venezky continues by illuminating the situation any reader or writer of English faces daily. For example, he instructs us to consider the letter *c*. The letter *c* has three common pronunciations (/k/ coal, /s/ city, and /ʃ/ ocean) and one rare one (/tʃ/ match). This helps us understand why knowledge of a word’s history and origin would help us remember how to spell a word, in addition to the development of activities that would help us memorize a particularly difficult word—for example, forty, which is simply “ill-formed” (Cummings 1988).

Educational Rationale for *FLY Through™ Spelling* What do we know about spelling development, spelling pedagogy, and the psychological processes related to learning how to spell?

In order to understand the appropriate place for *FLY Through Spelling* in home-related spelling schoolwork, one must have some understanding of new directions spelling that pedagogy

has taken in the 21st century. Only then will educators and parents understand the placement of the *FLY™* pentop computer in a student’s toolkit for learning to spell English. *FLY Through Spelling* was not designed to be a spelling program, but rather as an innovative way to 1) practice spelling such that visual memory is strengthened, 2) foster appropriate English letter-pattern knowledge and automaticity such that analogy can be used as an effective approach to spelling a new or unknown word (for example, “ough” or “ight”), and 3) help develop a love of learning how to spell by employing the tween desires for both play and challenge.

Research on Spelling

Over the years there have been hundreds of approaches to teaching English spelling, but there has been no magical formula (Moats 1995). Many students graduate from high school, even college, without a basic spelling vocabulary. It is not merely that they cannot spell challenging words, but also that many lack the knowledge of how to spell a core of common English words. “Everyday words are misspelled with dismayingly frequency: a lot, their, there, believe, friend, weird, favorite, beautiful, restaurant, college, different, too, I’m, and maybe,” to name just a few (Cramer 1998).

That said, the past two decades of research on spelling development have begun to shed light on how spelling might be taught effectively (Moats 1995, 2000). Understanding the stages of spelling development has helped educators assess what students understand and plan more effective programs. In addition, a deeper understanding of the psychological processes involved in learning to spell, as well as in applying one’s spelling knowledge while writing, has further broadened the options teachers use to both assess and teach spelling.

Research on Spelling Development

Students go through typical spelling stages (Henderson 1990, Bear et al. 2004, Moats 2000) where, at first, spelling is prephonetic: random scribbles take on interesting letter-like shapes, but the shapes have little to no connection to the sounds they represent. (“PN” might represent chocolate cake.)

Later, letter-sound connections begin to appear (“tbl” for table). At the beginning of this stage children understand spelling as a one-to-one correspondence system, where each letter of the alphabet has its designated sound. Within a year or two, however, children come to understand that English spelling is not based on a simple one-to-one scheme. They notice that some vowels are markers and are, therefore, silent—as is the case with the ubiquitous silent *-e* (make, plate). They also begin to understand that there are many spellings for the same sound, as Venezky demonstrated for the consonant letter *c*. Vowels are particularly difficult in English because of their many variant spellings. Consider all these spellings for the sound of long *a*, as in *ape*: *a*-consonant-*e* as in *ape*, *ai* as in *maid*, *ay* as in *bay*, *ei* as in *eight*, *ea* as in *meat*, and so on.

Once past this stage, children begin to notice syllable junctures—what happens to word endings. For example, when the ending *ing* is added, *es* drop (trading), letters are doubled (running), or letters change, as in the frequent pattern of *y* changing to *i* (happiness). Finally, older or more accomplished spellers begin to realize that there is often a constancy in spelling a word’s derivation, even if sounds change. For example, the *o* in *compose* is heard as a long *o*, but in one of its derivational forms, *composition*, the *o* takes on another sound, despite no change in its spelling.

The pedagogical effect of understanding how students develop as spellers has been monumental (Moats 2000). For good spellers and poor spellers alike, proper instruction must be carried out systematically over time, and spelling instruction must be tailored to match each developmental level of the student’s word knowledge (Invernizzi, Abouzeid, and Gill, 1994). All children benefit from a test-study-test method; from 10–15 minutes of practice a day; from words grouped by both frequency and spelling pattern; from frequent writing of the unknown words; and from active study involving writing, analyzing, and categorizing words rather than just “looking the words over.” All of this occurs best within a classroom that integrates reading, writing, and spelling instruction using meaningful and motivational techniques (Cramer 1998).

Children with poor spelling memories need direct teaching with student-teacher interaction; simultaneous, multisensory methodology; systematic, sequential, and cumulative emphasis on phonology (the sound-system of English); synthetic-analytic phonics progressing from part to whole; and systematic instruction on meaning-based units (morphology), such as affixes and roots, for spelling and usage (Moats 1995, 2000).





Research on Psychological Processes as They Relate to Learning to Spell

In the 1990s, studies began to appear on the acquisition and production of English spelling in relation to psychological processes (Barry, 1992, 1994; Seymour, 1992, 1997; and Zesiger and de Partz 1997). One model has been fairly dominant: namely, the dual-route or dual-process framework. This theory postulates that there are two separate neural pathways that can be employed to spell. They are speculated to operate in parallel and are linked, but they can be dissociated. One pathway, or route, is the phonological route and is responsible for the spelling of consistent or regular words (such as cat and dog) and for the production of unfamiliar words. The phonological process generates the spelling of words with the aid of phoneme-grapheme rules. The other route is the visual-orthographic pathway. This pathway allows direct lexical access without intermediate phonological processing, as it relies on word-specific information. According to the dual-process theory, the student must possess adequately functioning phonologic and visual modules, master the phoneme-to-grapheme and grapheme-to-phoneme conversion mechanisms, and be capable of reproducing the serial order of letters in words.

Spelling Pedagogy in the 21st Century

With the dual-process theory in mind, just as with the field's deeper understanding of spelling development, many renowned figures in the field of spelling education have recommended systematic and explicit English spelling instruction (Cramer 1998; Hughes and Searle 1997; Moats, 1995, 2003; Mosely 1994; Pérez Cañado, 2003, 2005; Templeton and Bear 1992; Templeton and Morris 1999). For direct instruction to be successful, it should be integrated into authentic instruction, where spelling instruction is seen as a tool for writing. It is equally advisable to appeal to all the systems that feed into phonologic and visual processes by combining auditory, visual, and tactile or kinesthetic activities and by addressing both routes to the acquisition of spelling: the phonological, or assembling procedure, and the visual, or lexical, one—for example, word searches. It is also worthwhile to vary the facets and activities used to work on English spelling. Pérez Cañado, in a recent Reading Teacher article (2005), gives explicit advice:

“Employing text and individual word dictations, proofreading activities, free composition, or cloze will enhance spelling practice auditorily, visually, receptively, and productively (the value of which are elucidated by Hildreth, 1962, and Moats, 1995). Using word, picture, and writing sorts; word searches; unscrambling; gap-filling; matching; multiple choice; flashcards; whole-in-part and part-to whole blending; crosswords; relay games; hangman; phonetic bingo; spelling bees; or a classroom message board, among other activities, will help the students to make generalizations about the spelling of words and related patterns and actively engage in drawing relationships between new words encountered in reading or writing, and will also add a playful element to the teaching of spelling (recommended by, among others, Forte & Pangle, 1985; Gentry & Gukketm 1993; Shemesh & Waller, 2000; Temple, 1995). A further didactic practice worthy of being taken into account is that of teaching developmentally-appropriate words that are representative of what the students are expected to learn and do in school, which ensures what Moats (1995) termed ecological validity (526).”

Brief Description of *FLY Through™ Spelling*

FLY Through Spelling is a collection of five innovative games for “tweens,” ages 8–12. The games use the revolutionary new *FLY* pentop computer from LeapFrog SchoolHouse in conjunction with accompanying special paper. The system uses personal spelling lists from school and/or difficult-to-spell English words, organized by grade level for practice through games. Each game has its own characteristic play-pattern, which capitalizes upon visual memory while using multisensory techniques (auditory, visual, tactile) to strengthen psychological processes known to relate to spelling acquisition and application (Zesiger and de Partz 1997). Stellar Speller, the easiest activity, is somewhat like the popular game Battleship, where the student’s spelling words are hidden beneath the surface of the special paper. There are help buttons with hints, and students are encouraged to look at their spelling lists in order to “make a match” more quickly.

Fortune Speller is similar to Hangman—rather like Hangman meets Wheel of Fortune. Students choose a letter; if the letter is correct, they are told where to put it (a hint). Students receive more points with fewer requests for hints. Once students think they know the word, they write the entire word correctly. All responses are acknowledged and students are led to correct spellings if errors are detected.

The other three games—Lost Treasure of Spelladonna, Word Wrangler, and Word Rap—employ scrambled schemes, typewriter-like keyboards, and beat-the-clock approaches.

CONCLUSION

***FLY Through Spelling* as an Instrument for Practice**

FLY Through Spelling was designed to function as a learning-to-spell tool, which by its very nature will motivate the tween set. Its package was not designed to be a spelling program. With wise spelling lists devised for students by informed educators, where words chosen to be learned are developmentally appropriate and organized by spelling patterns and curriculum requirements, *FLY Through Spelling* can serve as a useful tool to practice the spelling of designated words in a fun and engaging atmosphere. The games in *FLY Through Spelling* will strengthen knowledge of, and memory for, allowable and predictable English letter sequences such that known words can be spelled with greater ease and speed while writing, and where known words and patterns can facilitate the spelling of unknown words needed to communicate student meaning. In addition, *FLY Through Spelling* will help students memorize those “ill-formed” spellings mentioned by Cummings (1988). The supplemental activities in *FLY Through Spelling* allow for frequent practice, multisensory learning, and part-to-whole and whole-to-part systematic analysis—all hallmarks of current spelling pedagogy.

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