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# An Examination of Commercial Spelling Programs for Upper Primary Level students

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The acquisition of spelling skills in English presents, for a substantial number of children, a significant challenge. Spelling skills do not automatically transfer from reading skills, and while many teachers are aware of the need to develop a separate word study program to assist with spelling development, time and confidence factors often result in their turning to commercial spelling programs for assistance. But to what extent do such programs reflect what contemporary research tells us about how spelling skills are acquired? The current study uses criteria developed from Cramer and Cipelewski (1995) to analyse 9 Australian commercial spelling programs designed for use in primary Years 4 to 6. The programs are examined with special attention to the needs of weaker spellers. The study found that although the majority of the programs contained treatment of basic morphological aspects of spelling, only 2 of the programs presented material designed to develop understanding of the more complex sound-symbol relationships of the English spelling system. Treatment of more complex morphemic principles was weak in almost all programs, and there was only limited coverage of compound words, homonyms, contractions, and words that are easily confused.

**Keywords:** English spelling, instructional materials, upper primary levels

## Introduction and Theoretical Background

Spelling correctly is possibly one of the most valued yet difficult skills in written communication (Wanzek et al., 2006; Westwood, 2008a). It is curious that although we live in a highly literate society, surrounded by print, many people fail to learn to read and spell to a reasonable standard (Steffler, 2001). In fact, up to one third of students in some classrooms may struggle (Graham, 2000; Graham et al., 2008; Schlagal, 1992; Westwood, 2005, 2008a). For some, this results in a lifetime of inhibition in all situations involving writing (Graham, 1999; Ralston & Robinson, 1997).

Why is learning to spell in English so difficult? One factor is the lack of transparency and regularity in English orthography; that is, the lack of one-to-one correspondence between sounds and letters in the language. For example, while the sound /p/ is

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represented only by the letters <p> or <pp>, the sound /ei/ maps onto many letter strings, including *frame* (82% of spellings), *brain* (10%), *say* (4%), as well as *they*, and nine other minority spellings (5%) (Carney, 1994). Undoubtedly, the opacity of the English spelling system is in part due to the fact that the 44 phonemes<sup>1</sup> of spoken English must be represented by an alphabet of only 26 letters, resulting in some phonemes having to be represented by particular combinations or clusters of letters (graphemes), rather than by single letters. In addition, some of the most common words in English are irregular in that their (often Anglo-Saxon) spellings are not readily predictable from their sounds: *said* (/sed/), *should* (/ʃʊd/), *does* (/dʌz/), *women* (/wɪmɪn/), and even *was* (/wɒz/).

Nevertheless, significant consistencies, regularities and patterns do exist (Carney, 1994; Hanna, Hanna, Hodges, & Rudorf, 1966; Kessler, 2009; Kessler & Treiman, 2003; Venezky, 1970). According to Fischer, Shankweiler, and Liberman (1985), consistency in English orthography works at three broad levels. At the first level are words whose orthographic realisation is relatively close to their phonetic form, and whose spelling patterns have a high degree of occurrence (i.e., regular sound–letter associations such as *cat*, *step*, and *take*). At the second level are words whose sound–letter mappings are more or less straightforward, except that they contain a segment that is ambiguous or problematic, where the relationship between the symbols, sound and/or the morphemic structure is not transparent in the spelling. This typically occurs when rule-governed morphological changes are applied. For example, when the past tense morpheme<sup>2</sup> <-ed> is added to the verb *tap*, the sound /p/ is represented not by <p> but by <pp>, the doubled consonant signalling that the letter <a> is pronounced /æ/ rather than /eɪ/ as in *taped*. The third level consists of words whose foreign or archaic origins make it difficult to derive their spelling from morphophonemic knowledge alone. Such words contain one or more segments which either do not normally occur in English, or which occur infrequently, such as the words *debt*, *indict*, *bourgeois*, *Fahrenheit*, or *zeitgeist*.

For many young learners, especially those struggling with literacy, the complexity inherent in the English spelling system may be exacerbated by the teacher's choice of instructional approach (Ehri, 1989). In particular, approaches that concentrate primarily on rote visual memorisation and/or that promote incidental learning, such as the whole language approach, contribute to the challenges faced by many learners, especially low progress spellers (Ehri, 1989; McNaughton, Hughes, & Clark, 1994; Ralston & Robinson, 1997; Schlagal, 2002; Templeton, 1991; Templeton & Morris, 1999; Westwood, 2005, 2008a, 2008b). Although rote visual memorisation works well as a strategy for learning irregular or 'hermit' spellings, it tends to be insufficient to establish spelling patterns in long-term memory, especially where weaker spellers are concerned. The same applies to incidental learning approaches (where spelling is believed to be best learned from broad reading and writing alone). Neither rote visual memorisation or the incidental learning approach lead to the automaticity of recall needed for both reading and writing (Schlagal, 2002; Templeton, 1991; Templeton & Morris, 1999).<sup>3</sup> What is required for automaticity of recall is spelling instruction that is explicit and systematic, focusing on exploring patterns that can be detected in the sound, structure, and meaning features of words, and thus reinforcing and consolidating children's understanding of how the spelling system works (Graham et al, 2008; Hammond, 2004; Schlagal, 1992; Westwood, 2005, 2008a).

A further factor that can contribute to poor spelling achievement is a lack of depth in teachers' knowledge about the spelling system (including basic phonology, morphology and phonics) and strategies used to teach spelling (Fielding-Barnsley, 2010; Fresch, 2007; Hammond, 2004; Johnston, 2001; Loudon & Rohl, 2006; Meehan & Hammond, 2006; Moats, 1995; Templeton & Morris, 1999; Westwood, 2005, 2008a). Teacher preparation

courses do not always include studies in basic areas of linguistics (phonology, morphology, syntax and semantics), knowledge of which would greatly improve preservice teachers' understanding of how the English sound system, grammatical system, and orthographic system work (Carney, 1994; Coltheart & Prior, 2007; Fielding-Barnsley, 2010; Mahar & Richdale, 2008; Treiman, 1998; Westwood, 2005, 2008a). As Hammond (2004) rightly points out, 'It is hard to teach spelling if you don't know the rules about the English language yourself' (p. 16).

These factors, together with the need to fulfill state and national curricular requirements for regular spelling instruction, mean that many teachers turn to commercial spelling books to assist in designing their spelling programs.<sup>4</sup> However, commercial spelling programs (or basal spellers) have come under attack from researchers in spelling instruction. This is especially the case in the United States (US). A major and longstanding criticism is the failure of spelling textbooks to apply what is known from current research (Loomer, Fitzsimmons, & Strege, 1990). In addition, serious questions have been raised as to whether they provide adequate support for students, especially weak spellers (Moats, 1995; Schlagal, 2002; Wilde, 1990). Other major criticisms include claims that basal spellers encourage the rote memorisation of words, provide spelling rules and generalisations that are often inaccurate, oversimplify or explain poorly the complexities of sound-symbol and sound-meaning relationships, and include activities which extend beyond spelling into other areas of language arts, or are in other ways inappropriate. Schlagal (2002) found that few US spelling series engaged students in activities specifically designed to help them perceive, manipulate, and automatise the orthographic generalisations required. When spelling programs did offer organised word lists, appropriate contrasts between the words were often not made explicit, thus depriving learners of the opportunity to understand orthographic concepts more logically. For weak spellers, Moats (1995) and Schlagal (2002) warn that spelling textbooks may be counterproductive if the level of difficulty is matched to the child's age or grade level rather than to their developmental spelling level (their instructional level). This is because weak spellers usually have not established sufficient knowledge of spelling patterns to be able to benefit from instruction at their grade level (Schlagal, 2002). Weak spellers need, above all, spelling instruction that is appropriate to their developmental level, that is systematic, sequential, and well planned, and that provides copious opportunities for practice, reinforcement and review (Moats, 1995; Morris, Blanton, Blanton, & Perney, 1995; Westwood, 2008a, 2008b).

In the Australian context to date, there have been no empirical studies published that examine the content, structure and organisation of commercial spelling programs. Thus it is uncertain whether the criticisms outlined above also apply to materials used in Australia. With this in mind, the current paper examines several commercially published spelling books designed for use with middle to upper primary students (Years 4 to 6), with particular attention to the extent to which they reflect insights from contemporary research. The study examines the basis for the selection and organisation of words in the various spelling lists, the spelling rules, concepts, and generalisations presented, the instructional activities included, and the spelling strategies advocated. These aspects are examined with both average and weak spellers in mind.

### *The Study*

A convenience sample of nine commercially produced, print-based spelling programs was examined. The programs were chosen firstly because they claimed to target spelling (all included the word 'spelling' in their title, introduction, and/or publicity blurb), and

secondly because all programs were commercially available in major bookshop chains. For reasons of scope, only volumes dealing with Years 4 to 6 were included in the study.

### *Framework for Analysis*

Within the last 20 years there have been very few published studies that analyse and compare commercial spelling programs (particularly with regard to their application of contemporary research findings), or that establish empirically which spelling textbook programs and methods are most effective. In particular, as stated above, there are, to the best of the author's knowledge, no published studies that examine Australian spelling book programs, let alone those for upper primary learners. Further, there appears to be little current agreement among researchers precisely what the major analytical parameters should be for such a study.

For the current study, two major starting points were selected: the general structure and organisation of the spelling programs, and the stages of spelling development. The first point of departure, comparing the general structure and organisation of the spelling programs, comprised the following features:

- theoretical orientation,
- the provision of word lists and the basis for selecting words (phoneme–grapheme correspondences, themes, morphemic principles, etc.), and
- the type and focus of instructional activities (word practice or extension activities).

The second point of departure was research on how orthographic knowledge is acquired. Learning to spell is a long-term developmental process, and children typically go through a number of predictable stages (Bear, Invernizzi, Templeton, & Johnston, 1996; Beers, 1995; Frith, 1985; Moats, 1995; Templeton, 1991, 1992; Schlagal, 1992, 2007; Westwood, 2005, 2008a). Evidence for these stages comes from empirical accounts of what children are able and unable to do at various levels, what they 'use but confuse', and what is absent in their spelling (Invernizzi, Abouzeid, & Gill, 1994). Although different researchers use different labels to describe the stages, there is general agreement that certain skills and knowledge (in more or less detail) are evident in each stage.<sup>5</sup> The current paper uses Beers' (1995) model of the spelling development process, a brief summary of which is included in Table 1 in order to give perspective to the current study.

According to Beers' (1995) model, by middle-to-late primary school, the average learner is moving (or has moved) from simple, concrete, sound–letter correspondences (the phonetic stage) to the structural and meaning/derivational stages. At this stage, there is still consolidation required in more complex sound–letter correspondences (especially the mappings of vowel sounds), but a major area of focus is knowledge of morphemic principles. The typical student at this level is uncertain about the changes that occur at word boundaries when inflectional or derivational morphemes<sup>6</sup> are added, and also the way English spelling preserves visual links between words and their meanings (such as in *heal* and *health*), even though the pronunciation may vary (Beers & Beers, 1992; Schlagal, 1992; Templeton, 1991, 1992). In passing, it should be noted that morphemic aspects such as these constitute a particular area of difficulty for weaker spellers (Bourassa & Treiman, 2001; Carlisle, 1987; Devonshire & Fluck, 2010), even when their progress in representing the phonological structure of words has improved to normal levels.

Moats (1995) observes that in comparison to the early grades, far less is known about the nature and sequence of later stages of spelling. Perhaps the most detailed picture of student orthographic knowledge at upper primary levels is contained in Cramer and Cipielewski

**TABLE 1**  
Summary of the Stages of Spelling Development (Adapted From Beers, 1995)

Stage	Description
Prephonetic	Uses pretend writing, with random symbols representing words. Able to match some words with their meaning.
Early phonetic	Begins to learn names of letters and some sounds of letters. Can spell certain salient sounds, including some first and final consonants.
Phonetic	Uses letter names for short vowel sounds. Can represent many words phonetically, though not always correctly.
Structural Spelling	Can spell short vowels and words with common endings correctly. Experiments with long vowels, but misspellings at morpheme (inflectional) junctures are common, especially doubling errors.
Meaning/derivational	Doubling errors decrease, but misspellings of phonetically alternate forms of words are common, especially for root words with Latin/Greek origins. Increased knowledge of common prefixes and suffixes, and growing awareness that in derived forms, the spelling of root words is maintained despite changes in pronunciation.

(1995). Cramer and Cipielewski analysed the spelling errors taken from around 6800 compositions written by American children in grades 4–6, and concluded that spelling instruction at middle-to-late primary levels should focus on

- sound patterns involving less common phoneme–grapheme correspondences (especially variations in vowel sound mappings, but also in some consonant blends and digraphs, double consonants, and silent letters);
- word structure rules involving the addition of inflectional and derivational morphemes (inflected endings, such as <-s> or <-es>, <-ed>, <-ing>, <er>, <-est>, irregular plurals, and derivational prefixes and suffixes, including words that are related, such as *compete* and *competition*, and *legal* and *legality*);
- usage conventions (such as compound words; e.g., *radioactive*), homonyms (e.g., *tied* and *tide*), contractions (e.g., *they're*), or easily confused words (e.g., *accept* and *except*, *principal* and *principle*); and
- strategies for mastering a number of commonly misspelled words (such as *a lot*, *because*, *favorite*, *too* and *through*).

Support for Cramer and Cipielewski's criterial features is provided by not only Bear et al. (1996) and Westwood (2005, 2008a), but also Hammond (2004), which is one of the few empirical studies of an effective spelling instruction program within the Australian context.

In what follows, as a first step, each book is examined for general structure and organisation. Then the books are examined according to the criterial features derived from Cramer and Cipielewski (1995).

## Results

### *General Structure and Organisation of the Materials*

**(a) Theoretical Orientation.** It is important to note that no teacher manuals were provided for any of the programs examined. Consequently, the theoretical orientation underpinning the books had to be inferred from the instructions to teachers (and/or parents or caregivers) that were contained in the introductory pages of each volume, and/or the cover blurb, if

indeed any such instructions were provided. The content of the program was, however, another matter, and what was espoused in the introductory pages or cover blurb was not always reflected in the program, as Table 2 shows.

As can be seen from Table 2, most programs displayed approaches to spelling development that were oriented more toward incidental learning, rote visual memorisation (typically without reference to sounds) and/or applying simplified morphological ‘rules’ than toward developing a more systematic and sophisticated understanding of the complex relationships between the phonological, morphological, and orthographic aspects of English. These aspects are explored in more detail in what follows.

**(b) Spelling Focus and Provision of Word Lists.** A major distinction was made between programs that provided word lists and those that did not. A long-standing research finding is that one of the most successful approaches in the teaching of spelling is the use of word lists (for a summary of early research see Loomer, Fitzsimmons, & Strege, 1990), or, more to the point, word lists that help children to learn how to learn words (Schlagal, 2002; Steffler, 2001; Templeton, 1991; Westwood, 2005, 2008a). Well-organised word lists assist children to take advantage of regularities in the language, and make connections between sound-and-letter and letter-and-meaning patterns so that they can better abstract rules and regularities from print and use this knowledge to produce accurate spellings (Steffler, 2001). Thus materials which do not organise words so as to highlight the stability of the specific features of the orthography, and which do not provide practice activities which help learners internalise these words and patterns, are far less effective than those that do (Darch, Kim, Johnson, & James, 2000; Morris et al., 1995; Wanzek et al., 2006).

As Table 3 shows, only five of the nine spelling programs (termed ‘list-based series’) included word lists and accompanying instructional activities. The basis for selection of these words is examined below, though it should be remembered that none of the programs provided any rationale for word selection, nor any details about the word pool used to generate their word lists.

The word lists contained on average approximately 18 words, close to the number Templeton and Morris (1999) recommend for this age and grade level, though the number of words contained in the lists varied between three and 53. However, for weak spellers, it should be borne in mind that instructional programs that present learners with too many new words can exacerbate problems (Morris et al., 1995). Moats (1995) recommends limiting the number of words to no more than five or six words per day, and for those with severe spelling difficulties, three words per day is advised.

Of the remaining four series (termed ‘non-list-based series’), the spelling focus was diverse, consisting, for the most part, of activities such as crosswords, proofreading, word puzzles, choosing the correct homophone, and/or fill-the-gap exercises. Only one series (*Excel Spelling and Vocabulary*; Clutterbuck, 1998) contained spelling ‘rules’ or generalisations (many of which were inaccurate or unhelpful) and accompanying practice activities. In two series, spelling was very much a minor focus, taking up less than half a page per unit, and suggesting that the inclusion of spelling may have been more to do with marketing than with pedagogy.

**(c) The Basis for Selection of List Words.** As Table 4 below shows, there was considerable variation in the basis for generating and organising list words: sound-to-letter correspondences, letter-to-sound correspondences, letter patterns (visual), morphological features (plurals and other affixes), usage conventions (homophones, compound words), themes, and random selection.

**TABLE 2**  
Theoretical Orientation of the Spelling Programs

Spelling program	Theoretical approach to spelling acquisition	Theoretical approach apparent in program	Teacher/parent guidance on how to use program
<i>The Spell of Words</i>	Developmental word study – learn words containing the same sound or ‘idea’ (= morpheme), and develop an understanding of affixes.	As per espoused theory.	Can be used with multiple levels within a class, allowing teacher to allocate activities to different ability groups.
<i>Spelling Matters</i>	Developmental word study – improve ‘phonological’ (i.e., phoneme–grapheme correspondences), morphological, and etymological knowledge.	As per espoused theory.	Basic and challenge lists provided for weaker and stronger spellers. Not all the class needs to work at same level. One page to be completed in class, the other at home.
<i>Spelling Now</i>	Visual memorisation of letter sequences increases phonemic awareness (sound–symbol relationships), semantic knowledge and word study skills (etymology).	Some ‘common visual patterns’ presented, but for initial and final consonant blends only. Mostly rote visual memorisation.	Use praise and encouragement. Use look-cover-write-check for ‘high frequency’ words.
<i>Practise Your Spelling Skills</i>	Visual memorisation of common letter patterns. Understanding of affixes indicating changes of tense or plurality.	Rote visual memorisation only. No reference to the sounds in words.	Point out visual feature (e.g., <ar>) common to all list words, and check students’ understanding of meaning of word. Use look-cover-think-write-check to visually memorise words.
<i>Spellworks</i>	Visual memorisation of common letter patterns, syllabification, etymology, and knowledge of ‘common spelling conventions’.	Rote visual memorisation, some knowledge of rules regarding affixes, etymology.	Use look-say-cover-write-check each week with word list. Use a highlighter to underline difficult parts of words.
<i>Spelling for Fun</i>	Whole language/incidental learning: Spelling develops naturally through repeated exposure to words, and completing games and puzzles at a challenging but achievable level.	As per espoused theory.	Nil.
<i>Excel Spelling and Vocabulary</i>	Knowledge of ‘basic spelling rules’ regarding silent letters, affixes. Rote visual memorisation of common letter patterns.	Mixed. Memorisation of onsets and rimes (through copying or unscrambling words, and learning their meaning) but no reference to sounds, or understanding ‘spelling rules’.	Nil.

**TABLE 2**  
Continued

Spelling program	Theoretical approach to spelling acquisition	Theoretical approach apparent in program	Teacher/parent guidance on how to use program
<i>Excel Basic Skills English and Mathematics</i>	Nil.	Identifying and re-writing misspelled words.	Nil.
<i>Basic Skills Language and Mathematics</i>	Nil.	Knowing basic spelling 'rules', rote memorisation of words with silent letters, knowledge of how to add inflectional suffixes.	Don't encourage children to make wild guesses, consult a dictionary.

**TABLE 3**  
The Focus and Structure of the Spelling Programs

Spelling program	Purported focus	Number of units	Word list provided	Unit structure	Average no. pages of 'spelling' per unit
<i>The Spell of Words</i>	Spelling	36	Yes	Word list, practice activities, extension activities	2–3
<i>Spelling Matters</i>	Spelling	36	Yes	Word list, word practice activities, extension activities	2
<i>Spelling Now</i>	Spelling	32	Yes	Word list, word practice activities, extension activities	2
<i>Practise Your Spelling Skills</i>	Spelling	36	Yes	Word list, word practice activities, extension activities	3
<i>Spellworks</i>	Spelling	28	Yes	Word list, word practice activities, extension activities	2
<i>Spelling for Fun</i>	Spelling	57	No	Extension activities; e.g., crosswords, puzzles	1
<i>Excel Spelling and Vocabulary</i>	Spelling, vocabulary enrichment	31	No	Spelling 'rule' and word practice activities, vocabulary extension, dictionary use	1
<i>Excel Basic Skills English and Mathematics</i>	Integrated language skills, mathematics	30	No	Spelling (identify the misspelled words), reading comprehension, vocabulary extension, grammar, punctuation activities	Up to $\frac{1}{4}$ page
<i>Basic Skills Language and Mathematics</i>	Integrated language skills, mathematics	60	No	Spelling 'rule' and word practice, reading comprehension, vocabulary extension activities	Up to $\frac{1}{4}$ page



**TABLE 4**  
Features of Word Lists in the Spelling Programs

Spelling program	No. of words in list	Primary selection criteria for list words	Other selection criteria used
<i>The Spell of Words</i>	3–53	Sound-to-letter correspondences (but errors in word selection), morphemic principles.	Compound words, themes, word origins
<i>Spelling Matters</i>	10–20	Sound-to-letter correspondences (but errors in word selection), some letter-to-sound correspondences, morphemic principles.	Compound words, homonyms, contractions
<i>Spelling Now</i>	10	(a) Family words: visual patterns – similarity in onsets or middle segments. (b) Sight words: ‘high frequency words’ – no obvious criteria.	(a) Family words: morphemic principles (affixes) (b) Sight words: no obvious criteria
<i>Practise Your Spelling Skills</i>	8–10	Visual patterns.	Themes.
<i>Spellworks</i>	16–20	No obvious criteria.	–

One series, *The Spell of Words* (Aylward, 1979), based word selection almost entirely on sound-to-letter correspondences. Unfortunately, though, some lists (a small number) included words that did not contain the targeted sound. For example, in a list of 53 words purporting to contain long ‘e’ (/i:/), 18 words did not contain the targeted sound, including five members of the <ear> = /ɪə/ family<sup>7</sup> (*spear*, *fear*, etc.), five words with the prefix <de> = /də/ (*deliver*, *delight*, etc.), *cheer* (/tʃɪə/), and *reply* (/rɪˈplai/) (*The Spell of Words Level 6 Book 1*; Aylward, 1979, p. 26).

The other series that used sound-to-letter correspondence as a primary basis for word list selection, *Spelling Matters* (Woods, 2002), also contained a small number of inconsistencies, with words not containing the sound indicated. An example is the unit entitled ‘ough as in cough’, where only two words (out of 15) mapped the sounds /of/ as in *cough* onto the letters <ough>. The other list words contained four other mappings of the grapheme <ough>: /oʊ/ as in *though*, /ʌf/ as in *rough*, /aʊ/ as in *plough*, and /ɔ:/ as in *thought* (*Spelling Matters Book 6*, Woods, 2002, p. 22). In this case, the list words have been selected according to letter-to-sound correspondences, rather than sound-to-letter correspondence. Letter-to-sound mappings are utilised in reading, whereas spelling utilises sound-to-letter mappings. Organising spelling lists according to both sound-to-letter and letter-to-sound correspondences could well run the risk of confusing learners, especially the weaker spellers, destabilising their emergent knowledge of sound–letter pattern rules and generalisations.

The issue is an important one, as the act of spelling is, to a large degree, a phonological translation task (Weeks, Brooks, & Everatt, 2002), requiring the encoding of words from the phonological lexicon into print. Reading, on the other hand, is a decoding process, separate from the process of spelling (Templeton, 1991), and proceeds from the orthography (print) to spoken output (in the case of reading aloud). The correspondence system is far more predictable for reading than it is for spelling (Carney, 1994; Moats, 1995). While knowledge of a word’s spelling invariably informs the reading of that word, the converse is not always the case: knowledge of how to read a word is no guarantee of the ability to spell it (Foorman & Francis, 1994),<sup>8</sup> and the phenomenon of the person who is a good reader but a poor speller is well documented (see, for example, Coltheart & Prior, 2007; Treiman, 1993;

Westwood, 2008a). The situation for students with learning difficulties is more serious, since transfer effects from reading to spelling have been found to be limited (Ehri & Roberts, 1979; Lee & Pegler, 1982; Lovett & Steinbach, 1997). Weak spellers commonly have poorly developed phonological analysis skills (Vukovic & Siegel, 2006) and tend to have particular difficulties in using and remembering sound–letter correspondences (Lennox & Siegel, 1998; Moats, 1995), as they do not spontaneously perceive the semantic, phonological, or orthographic relationships among words. These learners typically benefit from explicit instruction where sound–symbol and meaning–symbol correspondences, syllable patterns or other language associations are presented to them in a logical, systematic way (Moats, 1995). Such findings have clear consequences for the way list words should be selected and organised.

Inconsistent sound-to-letter mappings in word lists were also found in two other programs, *Spelling Now* (Francis & Francis, 2003) and *Practise Your Spelling Skills* (Rose, 1999). In both cases the inconsistencies were due to the fact that list words were selected primarily on the basis of simple visual patterning of letters, with very little consideration of sound-to-letter correspondences. For example, in *Practise Your Spelling Skills Book 6* (Rose, 1999, p. 1), a list of ‘ui words’ (p. 58) included not only *bruise* (/bru:z/) and *fruit* (/fru:t/) but also *quiver* (/kwivə/). In this case, confusing the vowel sound /u:/ with the orthographic unit <qu> (which is sounded as /kw/) is counterintuitive. In another confusing example, the words *chemist* and *stomach* occurred in not one but two lists: the ‘silent letters’ list (p. 43), and the ‘ch’ (/tʃ/ as in *church*) list (p. 37). In fact both words are examples of the correspondence <ch> = /k/, in common with *character*, *choir* and *orchestra*, and many other Greek learned and scientific words (e.g., *architect*, *chlorine*, *chaos*), and do not belong in the <ch> = /tʃ/ word list.

In the remaining list-based series, *Spellworks* (Barwick & Barwick, 1998), the list words that appeared did not contain any obvious common orthographic features, implying that learners would need to memorise them individually. To illustrate, one list contained the following words: *rein*, *treat*, *swear*, *salad*, *judge*, *weight*, *height*, *command*, *warmth*, *arrange*, *weird*, *battle*, *league*, *seize*, *traffic*, *value*, *disappoint*, *serious*, *neighbour*, *punishment* (*Spellworks 5*; Barwick & Barwick, 1998, p. 28).

According to the literature, word lists that are not organised to promote orthographic generalisations are counterproductive, because without a spelling pattern in common the student may be inadvertently forced to focus on individual words, and use rote visual memorisation, rather than recognise spelling patterns that apply to a large number of words (Templeton, 1991; Templeton & Morris, 1999). Students given direct instruction in rule-based phoneme–grapheme correspondence analysis have been found to significantly outperform students encouraged to use visual imagery (Darch & Simpson, 1990). This is because when faced with randomly organised lists (or running text) most students fail to discover by themselves the different layers of information contained in the spelling of words and the corresponding sound and meaning patterns (Templeton & Morris, 1999). What is needed is for words to be selected and organised in ways that can facilitate awareness, understanding and application of spelling patterns. Studying groups of words that share structural and/or semantic features in an ongoing, developmental basis throughout the primary years is, according to Templeton (1991, p. 196), ‘[t]he central issue to which every learning and teaching issue in spelling continually reduces’. The brain is an ‘exquisitely designed pattern-detector’ (Bussis, Chittenden, Amarel, & Klausner, 1985, as cited in Templeton & Morris, 1999, p. 108), but its efficiency depends upon having adequate and appropriate information with which to work.

**(d) Type and Focus of Instructional Activities.** Two major types of activities were evident in the spelling programs: activities involving list words and/or the application of morphological principles and/or usage conventions (word practice activities), and activities dealing with other words or aspects of language use (extension activities).

The most common type of word practice activities were

- alphabetising list words (e.g., ‘Write the following words in alphabetical order’),
- displaying knowledge of their meaning (e.g., ‘Circle the correct definition of the list word’),
- finding smaller words in larger words,
- puzzles of various forms relating to list words, such as unscrambling words or word searches,
- completing paradigms (e.g., ‘Add –LY to these adjectives to make the adverb’).

Apart from the (important) secondary goals of offering cognitive challenge to maintain motivation and stimulate pupil interest, the intention of word practice activities appeared to be twofold: to focus students’ attention on the visual form of the word(s) by forcing them to attend to each letter, and to have them write the word multiple times. Writing a word several times is the subject of some controversy, with some researchers advocating as little as two repetitions. However, according to scholars such as Nichols (1985, as cited in Westwood, 2005, p. 19) and Schlagal (2002), writing a word several times can help to develop a kinesthetic memory (muscle memory) for the word. For weak spellers, writing a target word a number of times, particularly with a focus on producing writing that is legible and fluent, and is quickly produced with little conscious attention, can assist with the development of faster, more legible handwriting (Graham, 1999). Many students with learning difficulties have difficulties with handwriting: their writing tends to be less smooth, more variable and less legible than the writing of their regularly achieving counterparts (Graham & Weintraub, 1996), and they write more slowly (Weintraub & Graham, 1998).

The second category of extension activities, according to Wilde (1990) in her examination of US spelling books, tends to ‘provide a little of everything that might be found in a language arts curriculum’ (p. 270). A similar tendency is apparent in the Australian spelling books too:

- general vocabulary enrichment, including reading comprehension passages, word meanings, idioms, similes, and proverbs, antonyms and synonyms, knowledge of word roots (e.g., <geo->, <-ology>) and etymology (e.g., ‘Use your dictionary to find out from what language these words are originally derived’);
- puzzles (‘How quickly can you find a nine-letter word ending in *lia*?’, ‘Change BEAR into TRAP in four moves by changing one letter at a time to form a new word’);
- dictionary skills (‘Use a dictionary to find out these words that begin with GR’, ‘Which of these two words come first in the dictionary?’);
- proofreading (‘Rewrite the passage and correct any spelling and punctuation errors’);
- explicit grammatical knowledge, such as identifying or classifying parts of speech, phrases and clauses (‘Classify these proper nouns’);
- general knowledge (‘Match these famous Australians with the reason for their fame’);
- drawing (‘Use all four words in one sentence and draw the scene’).

Wilde (1990) questions the inclusion of activities related to vocabulary development in spelling books. However, vocabulary and spelling are two faces of the same knowledge coin (Templeton, 1992), and it is very important at upper primary level for children to have a knowledge of morphological/meaning connections between words and their origins. Explicitly teaching primary level learners how to identify root morphemes, prefixes and suffixes, and how to apply this knowledge accurately, has been found to lead to significant improvements in spelling ability (Devonshire & Fluck, 2010). In the case of weak spellers, whose reading skills and knowledge of vocabulary tends to be poor, vocabulary study is especially important. However, vocabulary study should be related to developing the lexicon, and tasks requiring students to look words up in the dictionary when meanings are not at issue not only have no research support but also students are unlikely to develop orthographic knowledge (Schlagal, 2002).

The Australian spelling programs contained a copious variety of puzzles. Researchers have expressed doubt whether certain types of puzzles, such as unscrambling words, translating them into secret codes, or alphabetising them, can help children memorise the spellings or develop generalisations about how words are spelled (e.g., Johnston, 2001). Schlagal (2002) goes even further, saying such activities 'are unlikely to promote orthographic learning' (p. 53), unless they involve list words, words previously studied, or words which are at the instructional level of the child.

In one series (*Practise Your Spelling Skills*, Rose, 1999), two pages out of each three-page unit were devoted to word puzzles. However, the puzzles were typically unrelated to either words contained in the word list or to morphological generalisations contained in the unit. In many instances they were of fiendish difficulty, suggesting the series had not received comprehensive 'road-testing' with students in the target age group/grade level prior to publication. In a typical example, Year 5 students were asked to find 'a six-letter word ending in -gue' (no <-gue> words provided in the spelling list, nor were any semantic clues provided), to 'change one letter in *try* to get a word meaning to raise with a lever' (not in the spelling list), and to unjumble the letters 'roginehbu' to find a word (also not in the spelling list). Such puzzles, where the words were decontextualised, were all the more frustrating because, unlike the other series, no list of answers was provided. Puzzles such as these might be suitable for gifted students, but they can be demoralising, and even counterproductive, for less able spellers.

Tasks designed to develop dictionary use skills (such as placing words in alphabetical order and between guide words, generating likely spellings, and recognising when a correct word has been chosen) can, according to Wilde (1990), develop useful component skills. However, she argues that their inclusion and format in spelling books makes the activities somewhat artificial, and they may be better covered in teacher-directed lessons where students can use their new knowledge immediately in the context of their own writing and editing. Similarly, activities involving general knowledge and drawing would appear to be better placed in other parts of the curriculum.

In the same vein, the ability to proofread is an important part of being a good writer (and speller), but there is considerable difference between being able to proofread one's own work, and being able to detect incorrect spellings in textbooks, often of phonetically plausible misspellings. Wilde (1990) points out that there is no evidence that spotting artificial misspellings of words that one has just studied can transfer to proofreading one's own work. Many scholars do not consider proofreading to be a good method of teaching spelling (e.g., Schlagal, 2002). Exposing learners to incorrect spelling in a textbook has been identified as problematic by Dixon and Kaminska (1997), who found that even a single visual encounter with a word that is misspelled can cause the word to be misspelled

**TABLE 5**  
Summary of Features of the Spelling Programs

Spelling program	Sound patterns (vowels, blends, digraphs, silent letters)	Morphological aspects (inflectional & derivational)	Usage conventions (compound words, homonyms, contractions, and easily confused words)	Strategies for mastering commonly misspelled words
<i>The Spell of Words</i>	✓	✓	All	✗
<i>Spelling Matters</i>	✓	✓	All	✗
<i>Spelling Now</i>	Blends, digraphs	✓	All	✗
<i>Practise Your Spelling Skills</i>	Digraphs, silent letters	✓	All	Provision of demon words
<i>Spellworks</i>	✗	✓	All	✗
<i>Spelling for Fun</i>	✗	✓	Compound words, homonyms	✗
<i>Excel Spelling and Vocabulary</i>	Silent letters, blends	✓	All	Provision of demon words
<i>Excel Basic Skills English and Mathematics</i>	✗	✗	Homonyms, small number of easily confused words,	✗
<i>Basic Skills Language and Mathematics</i>	Silent letters	✓	Homonyms	✗

Note. ✓ indicates substantial occurrence of the feature; ✗ indicates non- or minimal occurrence.

in the future, even if the learner has spelled the word correctly before encountering the misspelling. Yet proofreading exercises were one of the most common activity types found.

An instructional activity relating to list words that was noticeably absent was the word sort (see Bear et al., 1996, for examples of word sorts for all primary levels). Word sorts encourage students to compare, contrast, and classify words according to sound, spelling pattern and meaning, thus developing sensitivity not only to the environment in which sounds and letters occur within a word but also to how meaning may be preserved in words despite pronunciation changes. Word sorts are an extremely valuable activity to develop children's understanding of similarities and differences between words in their sound, structure, and meaning features.

### *Criteria Features of the Spelling Programs*

Turning now to the criteria set out by Cramer and Cipielewski (1995), the materials were evaluated to determine to what extent each program addressed (a) sound-letter patterns, (b) word structure rules, (c) usage conventions, and (d) strategies for overcoming common spelling errors. Table 5 summarises the extent to which each series addressed the criteria.

**(a) Lists and Activities Based on Sound-to-Letter Patterns.** According to Steffler (2001), spellers of all ages depend upon and use sound-letter correspondences when they attempt to encode unfamiliar words, and accurate knowledge of sound-letter correspondences is a vital component of spelling ability. However, whereas good spellers make connections between phonemes and their graphemic representations, very poor spellers are more inclined to rely on visually encoded representations of words (Lennox & Siegel, 1998). This reliance is believed to occur because of problems understanding and applying phonic principles, which is in turn often caused by an underlying weakness

in phonemic awareness (Vukovic & Siegel, 2006). Thus poor spellers stand to benefit from an explicit, systematic program of instruction focusing on phoneme–grapheme and grapheme–morpheme analysis (Darch & Simpson, 1990; McNaughton et al., 1994; Wanzek et al., 2006), as has been argued previously.

Average spellers, too, can benefit from phoneme–grapheme and grapheme–morpheme analysis, particularly when dealing with unfamiliar or multisyllabic words (Beers & Beers, 1992). Even though spelling regularities become more complex at upper primary level, they do not cease to depend on sound (Ehri, 1992). Hence, it would seem to make sense to build on this strategy in spelling programs by continuing to use sound-to-letter correspondences as a major basis for the selection and organisation of list words. Yet, as we have seen, only *The Spell of Words* and *Spelling Matters* do this.

These two programs were the only ones to address the spellings of complex vowel sounds, a surprising finding given that there is far more divergence in the spelling of vowel sounds (particularly the ‘schwa’ sound) than in the spelling of consonant sounds (Kessler, 2009; Kessler & Treiman, 2003; Templeton, 1991). Vowel sounds are more difficult for children to master than consonant sounds (Treiman, 1993), and vowel errors are by far the most common errors made by children in Grades 4, 5 and 6 (Cramer & Cipielewski, 1995).

Many people, lay and professional alike, think of spelling instruction in terms of explicit rules and generalisations which can help learners remember sound–letter combinations, such as the ‘<i> before <e>’ rule. However, spelling researchers urge caution in the use of spelling rules in general, arguing they are not particularly effective, as they lack consistency and can be too complex to understand and remember (Templeton & Morris, 1999; Wilde, 1990). Kessler (2009) reminds us that spelling rules are unlike the rules of mathematics: they are often complex, not absolute and frequently have many exceptions. Indeed, formulating and explaining spelling rules or patterns is hard even for many spelling experts. Much knowledge used during spelling is implicit (Templeton & Morris, 1999; see also Steffler, 2001), and is best acquired through guided examination of how particular spelling features and patterns operate. Nonetheless, there are a number of what might be called strong tendencies, or general principles, that can be used as rules of thumb in spelling unfamiliar words, such as the ‘<i> before <e>’ and ‘bossy’ <e> generalisations, or the mnemonic ‘when two vowels go walking, the first one does the talking’.

There were relatively few of these general principles evident in the spelling programs examined. One list-based series included a short section on the ‘bossy’ or ‘magic’ <e> generalisation (which ‘makes the vowel say its name’, thus changing a short vowel to a long one), but, confusingly, only 11 of 16 list words displayed the rule (words such as *windmill*, *afternoon*, *anywhere*, and *cupboard* (*Spellworks 4*; Barwick & Barwick, 1998, p. 38) clearly do not contain a bossy <e>). Surprisingly, among the nine series there was no coverage of the ‘two vowels go walking’ mnemonic.

Only one series, *Excel Spelling and Vocabulary* (Clutterbuck, 1998), presented ‘spelling rules’ on a regular basis, although unfortunately in many cases these were unhelpful, confusing, or even linguistically inaccurate, often because of failure to distinguish between sounds and letters: ‘Every syllable contains a vowel sound. The vowels are a, e, i, o, and u. Sometimes y is used as a vowel’ (*Excel Spelling and Vocabulary Years 5–6*; Clutterbuck, 1998, p. 9).

Wilde (1990, after Wheat, 1932) claims there are only two sound–letter correspondence rules that are worthwhile teaching:

1. <i> before <e> except after <c> when the sound is /i:/,

- When a word begins with a /k/, use <k> before <e> and <i>, <q> before /w/, and <c> elsewhere.

Rule 1 was covered in five of the nine series examined, but there was no coverage of Rule 2. In passing, Wilde's rule itself is incomplete, as it fails to account for /k/ spelt as <ch> as in *architect*, *chasm*, and *chorus*, or for /kw/ spelt as <ch> as in *choir* (all of which are patterns covered in *The Spell of Words, Book 6*; Aylward, 1979).

**(b) Word Structure Rules Involving Inflectional and Derivational Morphemes.** As pointed out previously, there is strong evidence that spelling patterns involving inflectional and derivational morphemes cause persistent problems at all primary levels, even the upper grades (Beers, 1995; Schlagal, 1992; Templeton, 1992). According to Schlagal (1992), the five morphological features that pose the most difficulties at middle and upper primary levels are consonant doubling, <e>-drop, affixes, derivational forms, and resolving the identity of vowels in unaccented syllables. An ideal way to approach the study of morphological principles is the word sort, as it emphasises invariant features, thus promoting a sense of order and predictability (Schlagal, 1992). However, as noted earlier, word sorts did not occur in any of the series surveyed.

Nonetheless, there was better coverage of the morphemic aspects of spelling across the programs surveyed than coverage of sound–letter correspondences, especially in the Year 5 and 6 textbooks. However, coverage of the way the meaning is visually preserved among words that are related (e.g., *medicine*, *medicinal*, *medical*) was poorly addressed. Further, apart from *The Spell of Words*, *Spelling Matters* and *Spellworks*, there was no systematic treatment of the semantic or meaning aspects of affixes. In most exercises, students were simply required to attach given affixes to words, with no reference to how the affix affected meaning. This represents a failure to capitalise on an important teaching point.

All programs except one (*Excel Basic Skills English and Mathematics*) contained at least one unit dealing with changes required at word boundary level when an affix is added. According to Wilde (1990, after Wheat, 1932), only four morphophonemic rules are worthwhile teaching:

- doubling consonants after a suffix,
- <e> deletion before the addition of a suffix,
- changing <y> to <i> (<y> replacement),
- if a root word can stand alone, <-able> is more likely, if not, <-ible> is more likely.

As Table 6 shows, while all the list-based series addressed the first three of these rules, only one series addressed the fourth rule, although the account given was not especially helpful ('There is no easy rule to tell when to use –ABLE or –IBLE', *Spellworks, Book 6*; Barwick & Barwick, 1998, p. 34).

**(c) Usage Conventions.** Cramer and Cipelewski (1995) found the spelling of homophones to be a pervasive problem at upper primary level. Misspelling of homophones is believed to occur because the writer has failed to link the correct orthography to the intended meaning or usage. Most series included at least one section on homophones, but, surprisingly, there was little agreement on what homophones to present: only three homophone pairs occurred in two or more of the programs (*stationary/stationery*, *check/cheque*, and *principal/principle*). Some homophones presented were obscure for this age level (such as *bark/barque*, and *bouillon/bullion*).

**TABLE 6**  
The Coverage of Wilde's (1990) Four Morphophonemic Spelling Rules

Spelling program	Consonant doubling	<e> deletion	(<y> replacement)	<-able> vs. <-ible>
<i>The Spell of Words</i>	✓	✓	✓	✗
<i>Spelling Matters</i>	✓	✓	✓	✗
<i>Spelling Now</i>	✓	✓	✓	✗
<i>Practise Your Spelling Skills</i>	✓	✓	✓	✗
<i>Spellworks</i>	✓	✓	✓	✓
<i>Spelling for Fun</i>	✗	✗	✗	✗
<i>Excel Spelling and Vocabulary</i>	✓	✓	✗	✗
<i>Excel Basic Skills English and Mathematics</i>	✗	✗	✗	✗
<i>Basic Skills Language and Mathematics</i>	✓	✓	✗	✗

To date, there is very limited research concerning which homonyms present learners with the most problems, and which should be covered at primary level (cf. Kohnen & Nickels, 2010), although Cramer and Cipielewski (1995) list the most frequently misspelled homophones across American grade levels as *too, there, it's, our, know, you're, through, heard, would, whole, let's, one, presents, and buy*. From this list, only seven homophones (*there, know, heard, buy, through, it's, and you're*) were found in any more than one of the series, suggesting that the treatment of homophones across the series is inadequate.

Other pervasive problems identified by Cramer and Cipielewski (1995) include words with apostrophes (such as *it's, they're, you're, and there's*, which also have homophonic variations), and compound words that are wrongly separated (such as *out side*). These aspects of usage conventions were addressed to some extent by all list-based programs, and by *Excel Spelling and Vocabulary*.

Coverage of words that are easily confused (such as *advice and advise, practice and practise, possible and probable*) was patchy. Words that are both easily confused and homophonic (such as *its and it's, they're, there, and their, your and you're*), which, according to Cramer and Cipielewski (1995), students misspell routinely even at secondary and tertiary level, received no treatment in the vast majority of the series.

**(d) Strategies for Mastering a Number of Commonly Misspelled Words.** As children progress through the developmental stages of spelling, they commonly use different strategies, and competent spellers have a repertoire of effective spelling strategies that they can call on as needed (Ralston & Robinson, 1997; Rittle-Johnson & Siegler, 1999; Westwood, 2008b). Westwood (2008b) stresses the importance of explicitly teaching children a variety of effective strategies with which to approach the spelling of difficult words, so that they do not just rely on the inefficient method of rote memorisation. The greater the variety of spelling strategies students are taught, the more efficiently and selectively learners will use them (Ralston & Robinson, 1997).

Westwood (2008b) identifies the following common strategies as being effective:

- Look-say-cover-write-check,
- Sounding out,
- Spelling by analogy (using 'word families,' or sets of words with similar sound or visual patterns, such as *east, yeast, easterly*),
- Knowledge of morphemic principles.



**TABLE 7**  
Spelling Strategies Advocated by the Nine Spelling Programs

Spelling program	Syllabification	Sounding out	Look-say-cover-spell-write	Spelling by analogy	Finding smaller words in long words
<i>The Spell of Words</i>	✓	✓	✗	Word list selection	Exercise type
<i>Spelling Matters</i>	✓	✓	✓	Word list selection	Exercise type
<i>Spelling Now</i>	✗	✗	Look-cover-write-check	Word list selection	Exercise type
<i>Practise Your Spelling Skills</i>	✗	✗	Look-cover-think-write-check	Word list selection	Exercise type
<i>Spellworks</i>	✓	✗	✓	✗	Exercise type
<i>Spelling for Fun</i>	✗	✗	✗	✗	Exercise type
<i>Excel Spelling and Vocabulary</i>	✗	✗	✗	✗	Exercise type
<i>Excel Basic Skills English and Mathematics</i>	✗	✗	✗	✗	✗
<i>Basic Skills Language and Mathematics</i>	✗	✗	✗	✗	✗

While some programs did not advocate any spelling strategies for use by students, others included three, four or even five strategies (see Table 7). The most common spelling strategy was some variant of ‘look-say-cover-write-check’. This is essentially a process of delayed copying, a strategy which has been shown to produce successful results (Brundson, Coltheart, & Nickels, 2005; Frank, Wacker, Keith, & Sagen, 1987; Stevens & Schuster, 1987). Saying a word slowly and deliberately as it is written has been shown to be effective (Bradley, 1981) as it helps slower learners notice how each phoneme is represented, and hence consciously attend to the matching of sound to symbol (Moats, 1995). However, the process may not work for all pupils with learning difficulties. More recent research has found that leaving at least a 10-second gap between the look-say-cover and the write-check stages greatly improves effectiveness (Brundson et al., 2005). Unfortunately, in two series where the look-say-cover-write-check strategy was used, ‘say’ was either omitted or replaced by ‘think’, suggesting a rote visualisation perspective which does not reinforce phonic generalisations.

The important strategy of sounding out was found in only two programs. Sounding out has been shown to be the predominant spelling strategy used by Year 5 children in Australia (Ralston & Robinson, 1997), and Devonshire and Fluck (2010) report similar findings for children in the UK regardless of age. Consequently, encouraging the use of this strategy would seem helpful. Syllabification (e.g., ‘Break the following words into syllables’) is another important spelling strategy for students with learning difficulties, but was found in only three series.

The strategy of using knowledge of morphemic principles to help master commonly misspelled words was not found in any of the programs. While most programs provided students with some knowledge about changes required at word boundaries during affixing, and contained some treatment of derivational prefixes (e.g., *legal*, *illegal*), there was very little attempt to encourage students to draw on this knowledge to master commonly misspelled words.

One activity that appears at first glance to be a spelling strategy was finding smaller words in longer ones, and all but two series contained exercises of this sort (e.g., ‘Find four words in *fortune*’). However, while the strategy can be helpful for mastering certain difficult or easily confused words (‘There is a *rat* in *separate*’, ‘The *principal* is your *pal*’), it is not clear how useful it is for a student to be asked to find four or five smaller words contained in a larger one; it may amount to no more than ‘busywork’. Further, as one anonymous reviewer remarked, finding unrelated words in a long word also provides ‘misinformation’ about the spelling system, and runs the risk of confusing students. A more beneficial activity would be to find smaller, related words; that is, identifying root morphemes.

Kohnen and Nickels (2010) list a number of techniques for mastering unpredictable (or irregular) words, including delayed copying, letter naming and writing, mnemonics, and ‘overpronunciation’. They note that none of these strategies is better than any other, but that the techniques should be matched to the students’ abilities and, it might be added, learning preferences. Of these strategies, only mnemonics was occasionally suggested in any of the series examined.

## Discussion and Conclusion

As Kessler and Treiman (2003) observe, ‘English is not Finish. Its spelling system requires years of study to master, and many pupils find it frustrating’ (p. 287). The task ahead of

such pupils may not be made much easier by some of the commercial spelling programs examined in the current study, and the majority of criticisms of American basal spellers would appear to apply equally to Australian programs. There was only limited evidence that the authors had tried to apply insights derived from contemporary research. In fact, most series contained practices that could be considered to detract from the basis of word learning (cf. Schlagal, 2002), in particular the failure to provide for the systematical presentation and study of well-organised lists of words. Where spelling lists were provided, in all but two programs, rote visual memorisation of the words was, in effect, the only avenue open to the student because appropriate contrasts between words were not made explicit, were nonexistent, or were confusing. As Templeton and Morris (1999) remind us, learning to spell should not just be about remembering the spelling of words, it should also be about understanding how words work — the conditions that govern their structure, and how their structure signals sound and meaning — and in this respect, most of the spelling programs were deficient.

In the majority of programs, the type and focus of instructional activities were highly variable, and few provided activities specifically designed to help students perceive, manipulate, and automatise orthographic consistencies, patterns and regularities. Some activities were overly difficult, and many others appeared to be wasteful 'busy-work' practice. In a number of programs, activities extended beyond spelling into other areas, and though some activities could be justified on the grounds of vocabulary development or focusing attention on the structure of words, many were of questionable merit.

As regards Cramer and Cipielewski's (1995) criteria, only two programs contained comprehensive treatment of sound patterns involving less common phoneme-grapheme correspondences. Indeed, some programs showed a curious lack of awareness of the connection between spelling and the sounds of the language. This is despite strong evidence that higher-order knowledge of phoneme-grapheme correspondences is a vital basis for spelling and continues to develop across the grades (Cramer & Cipielewski, 1995; Moats, 1995; Templeton, 1992).

Word structure rules involving morphemic principles received better coverage, although the way the spelling remains constant to indicate a shared meaning relationship among words (Templeton, 1991) was poorly addressed, and meaning aspects of affixes were not consistently provided. There was some coverage of usage conventions, such as compound words, homonyms, contractions, and easily confused words, but treatment was in general neither systematic nor extensive. Homonyms and easily confused words, which present particular problems in spelling acquisition, even for average spellers (Kohnen & Nickels, 2010), received cursory treatment overall. Finally, only a limited range of strategies for mastering misspelled words were evident in the series.

It is clear, then, that there is a need for Australian spelling book programs that are systematic, structured and sequential, with well-organised word lists and accompanying activities that are designed to encourage the learner to notice regularities in the spelling system, make connections between sound-and-letter and letter-and-meaning patterns, and reinforce memory for the spelling of words and patterns previously covered. At the upper primary level, such spelling programs should draw attention not only to the morphological and semantic principles of English, but also to complex sound-to-letter correspondences (especially the less common spellings of vowel sounds). Further, a more systematic focus on homophones is needed, as well as the presentation of a wide range of spelling strategies to master both commonly misspelled words and words that are often confused.

Finally, in closing, it needs to be stressed there is a strong need for more empirical research that specifically targets spelling development in learners at late primary level, with and without the benefit of a spelling program. There is also a need for research to help us establish what features make spelling book programs effective for this group of learners.

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## Endnotes

- 1 Phonemes are abstract, basic units of sound that differentiate words in a language (Fromkin et al., 2009). It is also worth noting that linguists differ in their estimation of the number of phonemes that Standard English possesses, and that there are a number of differences between the phonemes of Australian English and those of Standard American English and British (RP) English.
- 2 Morphemes are the smallest unit of meaning in a language. Every written word consists of one or more morphemes. For example, the word *tree* consists of one morpheme, while the word *indecipherable* consists of four (in+de+cipher+able): a nuclear or root morpheme, and three affixes.
- 3 To clarify, it is not argued that reading and whole language activities have no impact on spelling acquisition. According to the research, such activities can contribute to spelling development, but on their own they are, for many children, insufficient to develop understanding of how the spelling system works (Graham et al., 2008; Hammond, 2004; Westwood, 2005, 2008a).
- 4 As one reviewer pointed out, this represents a return to what was almost always the case prior to the 1970s.
- 5 However, it is not uncommon for children to be in more than one stage at once (Kohnen, Nickels, & Castles, 2009).
- 6 Derivational morphemes are the affixes (prefixes and suffixes) which change the part of speech of a word, and/or its meaning, such as the addition of the suffix <-ly> to make an adverb, or the <-er> suffix signifying a person who does something; for example, *baker*, *writer*. Inflectional morphemes include suffixes which signal verb tense, possession, and plurality, such as third person <-s>, past tense <-ed>, and present participle <-ing>, possessive <'s>, and plural <-s>.
- 7 The sound /ɪə/ as in *ear*, *fear*, *spear*, etc., is a diphthong in Australian English and does not contain the sound /i:/.
- 8 The research literature on the impact of reading instruction on spelling development is not encouraging. Graham (2000) concludes that its effects are modest. Though reading can strengthen readers' knowledge of how words are spelled (through repeated exposure to words in print), the ability to 'catch' spellings through reading tends to be restricted to older students, and both younger students and poor spellers gain little incidental knowledge of spelling from reading (Gilbert, 1934, as cited in Graham, 2000). Lovett and Steinbach (1997), for example, found that teaching decoding skills to 7–12-year-old children with severe learning difficulties did not result in improved spelling skills. Schlagal (2000) comments that while the ordinary practice of reading appears to sensitise readers to the spelling of words, such learning is indirect and incidental, and may be quite temporary unless direct study serves to fix it more permanently in memory.

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