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Planning an Intervention for Pupils with Spelling Difficulties

Pupils with special educational needs (SEN) who have learned to read with some success often experience a considerable lag in their spelling scores. In this article literature relating to spelling is critically reviewed in order to understand the underlying causes of spelling difficulty and to identify essential elements required to plan an effective intervention programme.

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INTRODUCTION

Despite modern use of text messaging, social networking and word-processing, there remains an important role for correct spelling in our society. Pupils who are poor spellers are frequently perceived to be less able by their teachers and fare worse in school. Spelling is considered to be the manner in which letters are arranged in words. Pupils with special educational needs (SEN) often have difficulty both in the arrangement of the letters in words to represent the phonology of a language and in their arrangement according to conventional usage or orthography.

THE DEVELOPMENTAL STAGE MODEL OF SPELLING

Teachers should be aware of the developmental stages in proficient spelling acquisition in order to adequately cater for the emerging writing needs of all their pupils (Westwood, 2007). Culligan (2009) notes that knowledge of the developmental stages of spelling "allows teachers to notice and adjust their teaching" and creates a necessary consciousness of spelling as an important factor in a child's development (p. 35). Gentry (1981) proposed the idea that children learn to spell in a distinct developmental sequence and developed a stage model as an instrument and set of descriptors that teachers could use to assess the stage of cognitive development of their pupils in respect of spelling. Gentry's stages include *pre-communicative, pre-phonetic, phonetic, transitional* and *correct/ competent* stages.

Pre-Communicative/Preliterate Stage

At the *pre-communicative* phase the child is imitating writing in an entirely random fashion. Gentry (1981) provides the example of a boy who wrote " tBpA" for "monster" and considers that this proves the child has left-right directionality and is correctly using letters in words rather than other symbols. He believes that this is an important phase which cannot be overlooked (p. 379). Ganske (1999) calls this stage, the *preliterate* stage whereby "children's spelling ranges from random marks to the use of actual letters, but with no sound symbol correspondence" (p. 48). Children in this phase need to be allowed to scribble freely to begin their writing journey (Henderson and Templeton, 1986).

Pre-Phonetic Stage

During the *pre-phonetic* stage the child represents some of the more salient sounds as letters such as "msr" for "monster" and demonstrates an emerging consciousness of the alphabetic principle, i.e. that there is a link between a letter and a sound (Gentry, 1981, p. 379). Bissex (1980) illustrates this stage in the example "EFUKANOPNKAZIWLGEVUAKANOPNR" – "If you open cans, I will give you a can opener" (p. 198). Henderson and Templeton (1986) observe that at this stage a child's spelling is "confusing to adults who know how English spelling actually works and are not in the habit of thinking only in alphabetic terms" (p. 307).

Phonetic Stage

The *phonetic* stage is characterised by a concrete linking of all sounds to letters as in the example provided; "monstr" for "monster". Gentry (1981) comments that "the child's phonetic writing does not look like standard spelling, though to both the trained eye and to the writer it is readable" (p. 379). Bissex (1980) also notes this difference in the child's "sense of the unit of correctness changing from letters to words" (p. 198). Henderson and Templeton (1986) suggest that the learner is "moving beyond the surface of the speech sound and beginning to form the within-word pattern principle" but "can only gradually identify a pattern at a glimpse or write it automatically" (p. 309).

Transitional Stage/Syllable Juncture Stage

Gentry's *transitional* stage represents a mix of some correct spelling and some spellings still at the phonetic level. Various common vowel patterns and letter strings are represented but these are inconsistent and frequently erroneous. He suggests that it is at this stage that formal spelling instruction, to augment rather than replace the child's newly acquired writing habit, is of most benefit (Gentry, 1981). Ganske (1999) describes this stage as the *syllable juncture* stage where the

learner must preserve pattern/sound boundaries in longer multisyllabic words, for example, "swimming" not "swiming"; "fountain" not "founten" (p. 46).

Correct/Competent Stage

In the *correct/competent* stage words are now represented according to their accepted correct usage and the "intricacies of the alphabetic principle" and orthographic conventions are well established (Gentry, 1981, p. 380). Henderson and Templeton (1986) offer a different view of this final stage noting three ordering principles in the spelling system of English: "Alphabetic, within-word pattern and meaning" (p. 306). Gentry, Ganske (1999), Bissex (1980) and Henderson and Templeton's stages all conform to these principles.

Culligan (2009) notes that there has been some controversy about whether pupils move easily from one stage to the next. He argues that without effective instruction, there is no guarantee that this will happen. Leaving formal spelling instruction until the transitional phase risks the pupil never receiving formal spelling instruction at all. The learner with dyslexia or general learning disability (GLD) is prone to remain at the phonetic stage. Culligan warns that "in all probability, without prescribed support, his/her spellings will deteriorate and his/her self-esteem as a speller may be irrevocably damaged" (p. 38). This is indeed a contrast to Gentry's optimistic assessment of the phonetic stage as an exciting freedom of expression. Westwood (2007) makes a strong case for explicit teaching of spelling when he states, "children will not necessarily become adequate spellers if left to discover spelling principles for themselves" (p. 160). Learners with GLD and specific learning disability (SLD) do not appear to just "pick up" spelling unassisted.

CAUSES OF POOR SPELLING

Poor spelling has been attributed to phonological factors and to deficits in visual and auditory memory. A study by Friend and Olson (2008), found that spelling disabled pupils had significantly lower scores in the area of phonological accuracy than their developmentally similar but younger peers. They further demonstrate a "link between phonological skills in reading and spelling" (p.103) but make the valid point that because many pupils who have difficulties with reading and spelling receive phonological remediation, some of the effects of a phonological deficit are difficult to measure. Drake and Ehri (1984) in a study of forty-two fourth grade students in the US noted that having pupils produce "careful pronunciation of standard spelling facilitates memory for spelling" (p. 314) and that poorer spellers benefitted more from this process than good spellers. This

could be interpreted as meaning that the better spellers have a more accurate phonological representation of the word from the outset. Likewise, Burt and Shrubsole (2000), studying forty-four Canadian college students showed that students with difficulties in phonology and word pronunciation are poorer spellers.

Atkins and Tierney (2004), in an Irish study of sixty-nine, twelve-year-olds with dyslexia examined the issue of deficits in reading and spelling in relation to memory skills. They showed that weakness in auditory sequential memory (ASM) and visual sequential memory (VSM) are strongly linked to poorer spelling and reading scores. Furthermore, they noted that ASM in pupils with dyslexia does not show age-related improvements. In their view auditory processing type activities would best serve the needs of such learners. This is in contrast to the view expressed by Culligan (1997) that "continued reliance on sound as an approach to learning or teaching spelling is detrimental" (p. 14). On balance however, Culligan does favour a variety of approaches including "an application of kinaesthetic and tactile methods" (p.15) when supporting learners with a dual weakness i.e. poor auditory *and* visual skills.

In relation to the cognitive strategies that the learners themselves employ, Young (2008) used "think aloud" protocols with a group of eight and nine-year-old learners to ascertain if their assessed stage of spelling development is consistent with their reported strategies. Using open and closed word-sorts and editing further divided into production and discussion tasks, Young showed that "children are using a greater range of cognitive processes than is explained by the developmental stage theory of spelling alone" (p. 135). She further suggests that some implications for improving practice in her findings include the use of "think alouds" in peer tutoring and think aloud modelling by the teacher.

INTERVENTION APPROACHES TO ADDRESSING SPELLING DIFFICULTIES

Fulk and Starmont-Spurgin (1995), present no less than fourteen research supported techniques to improve spelling and motivation in pupils with learning disabilities, including teacher-directed techniques such as reduced word lists and reinforcement, imitation and modelling, goal setting or graphing and use of computers to practice. Five of the more relevant techniques are: systematic study procedures; error self-correction; analogy strategy; peer-tutoring; and word sorting.

Systematic Study Procedures and Error Self-Correction

Nies and Belfiore (2006) investigated the effect self-correction had on the acquisition and retention of spelling words of two third grade pupils with a learning disability. Their findings clearly support the use of Cover Copy Compare (CCC) methods for improved retention and motivation in relation to spelling. They suggest that the crucial factors at work are "the impact of self-evaluation (i.e. error discrimination) and self-correction (i.e. response modification)" (p.169). However, the important caveat is that the procedure be rigidly adhered to. Culligan (2009) similarly endorses visual awareness and discrimination as a vital element in spelling acquisition. The CCC approach appears methodologically very similar to the look, cover, copy, check method advocated in the *Primary School Curriculum* (NCCA, 1999) but may provide an easier abbreviation for the learners to remember.

Analogy Strategy

Strategy training in finding analogy in word spelling helps to increase generalisation of spelling skills to other words. Pupils can be taught that when words rhyme, the last part is often spelled the same and be given specific strategies to generalise that learning to new words (Englert, Hiebert and Stewart, 1985). This type of training in knowledge of onset, rime and analogy supports the pupil in helping them move from the known to the unknown (Westwood, 2007), although Culligan (2009) warns that the disadvantage of this approach is the traditional overemphasis on sound based on a phonic element rather than the visual elements of spelling.

Peer-Tutoring

Rathvon (1999) believes that peer-tutoring has benefits in whole class teaching of spelling as it provides "increased opportunities for each student to practice spellings without increasing the total amount of time set aside for spelling instruction [and] it prevents reinforcement of errors because peer tutors provide immediate feedback of response" (p. 210). Hashimoto, Utley, Greenwood and Pitchlyn (2007) in a study of forty, third grade pupils in the US, examined whether class wide peer-tutoring (CWPT) was effective in improving pupils pre-test/post-test scores against a control group and significantly whether generalisation and retention improved in the CWPT group. Their results show a marked increase in pre-test/post-test scores in the CWPT group against the control group but no differences in generalisation. The authors advise that "teachers should employ other strategies such as a systematic review of materials and sentence practice besides and in addition to peer-tutoring in order to ensure that generalization occurs" (p. 26).

Word Sorting

Zutell (1998) defines word sorting as "an activity in which students organize words printed on cards into columns on the basis of particular shared conceptual, phonological, orthographic and meaning-related features" (p.119). In a small scale study of three nine and ten-year-old American pupils with mild GLD, Joseph (2002) shows that the use of word sorts and word boxes improved both the spelling and reading of consonant-vowel-consonant (CVC) words for these pupils. He emphasises the importance of this technique in explicitly linking sound and symbol and by "repeated exposures to words in multiple contexts [with] opportunities for students to make many responses within an instructional period, modelling and corrective feedback" (p.128). Young (2008) says that the use of word sorts facilitates a view of the learner's cognitive processes when combined with "think aloud" strategies.

INTERVENTION

In summary, it appears from the research that:

- pupil acquisition of correct spelling is a developmental process with some pupils remaining at the phonetic and transitional stages longer than others
- knowledge of these stages is useful for the teacher in planning towards a learner's spelling needs
- the causes of poor spelling involve a strong element of difficulties with phonological processes and phonemic mapping in younger learners which can persist over time
- some evidence has been suggested for auditory and visual processing difficulties in relation to a learner's progress
- the voice of the learner should be captured in planning for effective spelling interventions.

A suggested plan for a short-term (e.g. six to nine weeks) intervention to improve the spelling scores, retention and generalisation skills of a small group of pupils and to increase their confidence in their own spelling development is outlined below. Intervention approaches include peer-tutoring, analogy training and study techniques involving elements of error discrimination and self–correction such as CCC and word sorts.

SUGGESTIONS FOR A PLANNED INTERVENTION PROGRAMME

Assessment Phase

The first week element of a planned six to nine-week intervention would involve testing the pupils to ascertain their current stage of development on the spelling stages outlined earlier. The Single Word Spelling Test (SWST) (Sacre and Masterson, 2000), would be useful in identifying areas of greatest need in respect of within word patterns, common spelling rules and syllable rules, and would provide a percentile and standardised score. Because the intervention involves an evaluation period and the test norms in the SWST would be invalidated using the same test twice (but valuable from a diagnostic and qualitative point of view), the Wide Range Achievement Test (WRAT4) (Wilkinson and Robertson, 2006) spelling subtest could also be administered and repeated at the end of the intervention period to measure any improvements in standard scores and percentiles.

A sample of the pupils' free writing using a picture as a scaffold would be collected in order to identify errors made in whole sentences and stories. This would also provide more evidence about their stage of spelling development using Young's (2008) checklist. Each pupil would also be interviewed individually whilst editing their free-writing. Assessment data would then be used to diagnose each pupil's particular areas of need in spelling, their level on the spelling developmental continuum and to identify a starting point for instruction and to devise a programme for each pupil.

Training Phase

The next two to three sessions of the intervention would involve skill training for the pupils. At the start of the training phase the CCC method would be taught, emphasising the correct phonology and pronunciation of a word. The strategy should be modelled first with pupils who could then practice in pairs as tutor or tutee. During this training phase generic lists of frequently misspelled high frequency words would be practiced. Particular attention should be given to Nies and Belfiore's advice to stick rigidly to the elements of CCC (see Nies and Belfiore, 2006, p.166).

The next step of the training phase would include some post CCC "think aloud" discussion, initially modelled by the teacher and then by each pupil in turn. Pupils would be scaffolded to improve their cognitive processes in thinking about correct spellings and also to give them some useful language such as *beginning blend, suffix,* etc to facilitate their thinking strategies. The pupils would be given explicit

analogy training using some of the generic list words as a scaffold. The rime or within word pattern would be identified and pupils would be taught that when words rhyme that the last part is often spelled the same (Englert, Hiebert and Stewart, 1985, p. 302). The pupils could next be introduced to word sorting. Activities would involve sorting words according to sound category using sorting boxes or cards, teacher use of "thinking aloud" strategy while modelling sorting, encouraging pupils to give "think aloud" feedback on their own word sorting, and speed sorting for fun and repeated practice. Following this the pupils could write their sort into their spelling notebooks for later revision. Finally, the pupils would give each other a blind sort in their tutor/tutee pairs to test each other (adapted from Invernizzi, Johnston, Bear and Templeton, 2009, p.19).

Spelling Work Phase

The pupils will have been trained in the use of CCC, "think alouds", analogy and word sorting and should now be ready to begin work on their own individual word lists consisting of six common analogy words and stage level word sorts. In drawing up their individual word lists the diagnostic information obtained in the assessment phase would be used.

On the first day of each week in this phase, each pupil should work on four of their own words in peer-tutor pairs. Each pupil would have to give "think aloud" feedback about their words. A five minute, whole group lesson on their common-to-all analogy word would be taught and the pupils would record this in their spelling notebooks.

On day one of each week it would be important to discuss the previous week's work and briefly re-examine lists, analogy work and sort categories to help with retention and generalisation. On day two, the pupils should continue to work on their list words with three words per pupil on this day, swapping roles as appropriate. Day one's words would also be revisited. The week's word sort should be distributed and "thinking aloud" modelled for the pupil. The pupils should then sort the words and the teacher checks them.

Finally, on day three of each week the pupils would work on the last two list words using CCC and "think aloud" and revising the other target words from days one and two. The pupils would then test each other by calling out all nine target words in their pairs. A bonus word could be chosen at random from the week's analogy word list, giving a score of ten. The pupils could record their progress on a group record sheet.

Following this the pupils would practice their word sort individually, giving "think aloud" feedback. A speed sort could be used to see who is the fastest at sorting, and in pairs the pupils could give each other a blind sort, writing called out words under the correct headers in their notebooks.

Evaluation Phase

Following the weeks of the spelling work phase as described, pupils would be re-assessed using the same instruments and as described at the assessment stage, above. The standard scores from the WRAT4 should allow for any improvements to be noted, although any differences on the SWST are not statistically valid given the short time-frame between tests. Nonetheless any qualitative improvements will be welcome. Given the emphasis on "think alouds", word-sorting and knowledge of the actual language used to describe the spelling process, the evaluation interview should show the pupils employing more meta-cognitive strategies and becoming more confident in their own spelling abilities.

CONCLUSION

It would appear that there is now beginning to be more debate in the area of spelling and a recognition of its centrality to literacy, with more research studies being carried out. Nevertheless, although the developmental stages of spelling have been under discussion for forty years, there remains a dearth of research in this area in comparison to reading.

Pupils with SEN do appear to acquire spellings along the same developmental pathway as pupils without SEN. It appears from the literature that pupils with poor phonological processing and pupils who have had early difficulties in mapping the sounds of English onto letters are those who are most at risk of developing spelling difficulties and getting 'stuck' at earlier stages along the spelling developmental continuum.

Henderson and Templeton (1986) consider that "the process of learning to spell may be seen as a complex but orderly system" (p. 314). The approaches outlined in this intervention would I believe, facilitate the construction of these complex but predictable rules. Additionally, systematic, well planned, research-based teaching in spelling should further improve pupils' confidence and meta-cognitive skills and move them in the right direction along the developmental continuum of spelling.

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