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7. The Journey to Literacy: Success for Children with Moderate Learning Difficulties

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This paper reports on a project which investigated the effectiveness of the Phono-Graphix approach to assist a sample of primary school children. These children were struggling with the development of their literacy skills and were referred for intervention under the category known as moderate learning difficulties (MLD). These 16 children, aged between 7 and 11 years and from four year groups in eight primary schools in Northern Ireland, received a weekly Phono-Graphix intervention. Progress in spelling and writing was judged to improve over a period of one year using standardized and diagnostic tests, observations, interviews, analysis of the children's reading books and samples of written work. One year after the intervention had ended, follow-up assessments showed that the improvements had been sustained and in some cases enhanced. The research shows that Phono-Graphix influenced progress in these areas for the participating children.

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INTRODUCTION

It is now generally acknowledged, most recently by Torgerson, Brooks and Hall (2006), that systematic phonics instruction should be a routine component of literacy teaching. Indeed, as set out in the DfES *Independent Review of the Teaching of Early Reading* (DfES, 2006 – also known as the Rose Review), phonics is an accepted part of the British Government's recommended approach to teaching literacy. Looking back over the last several decades, following the 'great debate' initiated by Chall's publication of *Learning to Read: The Great Debate* (1967), the arguments have moved from a focus on the effectiveness of phonics to the type of phonics that most ably achieves this. Once again, teachers find themselves at the literacy crossroads, this time with regard to which specific phonics route should be followed.

SYNTHETIC AND ANALYTIC PHONICS

Synthetic and analytic phonics are the two most prominent systematic phonic approaches. Synthetic phonics teaches individual letter-sound correspondences. Once familiar with a small number of these, children are encouraged to create consonant-vowel-consonant (CVC) words such as *pin*. The focus is on pronouncing sounds in isolation and then blending or synthesising these to produce the word. For example, to identify the word *stop*, children would sound out each phoneme /s, t, ɒ, p/ and then blend these together. When spelling, children are taught to segment words into their phonemes, saying each sound as they write it. The skills of blending and segmenting are taught as reversible processes.

Sounding out is avoided in analytic phonics, with sound-symbol relationships taught by analysing sets of words that share a letter and sound, such as *fat*, *fish* and *flag*. Initial sounds are targeted first, followed by final, then medial (vowel) sounds, clusters (e.g., *fl*) and digraphs (e.g., *oa*). The definition of analytic phonics is extended by some to include starting with the whole word and highlighting letter patterns, which are split into smaller parts in the form of onsets and rimes (e.g., *m/at*). The idea is that rimes help children learn to read and spell by the process of

analogy. If a child can read and spell *mop*, he or she should be able to transfer knowledge of the word ending *op* to *hop* or *stop*.

The Rose Review (DfES, 2006, p. 4) recommends that synthetic phonics offers 'the vast majority of young children the best and most direct route to becoming skilled readers and writers.' The elevation of synthetic phonics is based on the premise that 'it teaches children directly what they need to know…whereas other approaches, such as analytic phonics, expect children to deduce them' (DfES, 2006, p.19). Some of the proposals made by Rose (DfES, 2006) have caused disquiet among academics and practitioners. For example, the United Kingdom Literacy Association (UKLA), while embracing many of Rose's recommendations, has reservations regarding the favoured status of synthetic phonics. Agreeing that children need systematic teaching, the UKLA (2006, p. 3) argues that 'a combination of synthetic and analytic approaches maximises pupils' opportunities to acquire sound/symbol relationships in English.' The recent review by Torgerson, Brooks and Hall (2006) does not take a position on which phonics approach, synthetic or analytic, is most effective. However, they acknowledge that this stance arises from the results of only three randomised controlled trials.

Phonics is generally associated with reading and this is reflected in the high levels of research and media attention afforded to this area. Although Torgerson et al. (2006) point to the insufficient research base on whether phonics should be used to teach spelling, the Rose Review (DfES, 2006) refers to the essential role it plays in the development of writing, particularly spelling. This is based on local and international literacy research findings that emphasise that, for children to understand the link between spoken and written language, mastery of the alphabetic code, that is, the letter-sound correspondences that link written words to their pronunciation, is fundamental. The Australian report, *Teaching Reading* (DEST, 2005, p.25), recognises these as 'foundational and essential skills for the development of competence in reading, writing and spelling,' and Rose (DfES, 2006) concurs with the outcomes of this report, which reiterates that they must be taught explicitly, systematically, early and competently.

PHONO-GRAPHIX

Progression in learning and the contribution it makes to enjoyment and personal growth are restricted for many children with moderate learning difficulties. For such children, the acquisition of literacy is a difficult and demoralising experience which is exacerbated as they get older. Efforts to explore and provide appropriate intervention for children, including those with literacy problems, are ongoing. This study sought to contribute to this area by evaluating the impact of Phono-Graphix (McGuinness & McGuinness, 1998) on the reading, spelling and writing performance of children with moderate learning difficulties.

McGuinness and McGuinness (1998, p.12) view Phono-Graphix as representing a 'shift' in phonics teaching. The extent to which this is true remains to be seen but their argument has some plausibility inasmuch as it is built around the premise of 'essential education' (McGuinness & McGuinness, 2005, p.27). This advocates focusing only on the core elements of what is necessary to teach and on knowledge of how children learn. This principle of teaching only what is necessary it is argued, significantly reduces the amount of information children need to learn to master the alphabetic code. Based on the principles set out in the Rose Review (DfES, 2006), Phono-Graphix is arguably a variant of synthetic phonics. There are, however, some nuances that distinguish Phono-Graphix from other synthetic programmes and these will be alluded to within this paper.

Like many synthetic phonic programmes, the Phono-Graphix approach avoids teaching letter names and consonant clusters and rime endings, which total over 1000. It also avoids phonic rules, including exceptions, and using initial letter, picture and context cues to assist with word identification. Such complexity is eschewed by the promotion of a singular strategy to assist with the reading and spelling of words, which is based on an understanding and application of code knowledge. Phono-Graphix begins by targeting what the children are familiar with, that is, the sounds of their language, which are already embedded from around the age of one. The underlying principle is to help children understand the relationship between their already acquired spoken language and the written language they are encountering in texts.

In contrast to many synthetic programmes, Phono-Graphix does not incorporate songs or actions to aid learning letter-sound correspondences, as these are viewed as diverting attention away from the actual purpose of the activity. Rather, Phono-Graphix purports to help children learn and understand how the 44 main sounds in English are represented by teaching these in the context of words. This is considered to help children associate the symbols with their sounds faster because it offers a more meaningful and purposeful approach, helping children appreciate that the reasoning behind knowing the letter sounds is to read and write words.

The perceived similarity of Phono-Graphix to synthetic phonics results from its emphasis on teaching the key phonological skills of segmenting individual sounds, the blending of these to form words, and its recommendation to teach quickly. However, the distinguishing feature between Phono-Graphix and some synthetic programmes is the emphasis it places on children learning the key skills of segmenting and blending, as well as phoneme manipulation, from the beginning of instruction, in the context of whole words and through shared and guided reading experiences using a range of literature. The children actively participate in their learning by engaging in interactions with the teacher and in practical problem-solving tasks embedded in meaningful contexts.

The Phono-Graphix programme comprises three levels.

i. The 'basic' code introduces children to the idea that letters are 'pictures' of the sounds they make when speaking. The one-to-one letter-sound correspondences are taught in the context of CVC words, followed by VCC, CVCC, CCVC and CCVCC words.
ii. The 'advanced' code level, the most extensive component of the programme, introduces three concepts, namely:
    - two or more letters can represent one sound (e.g., *sh* and *igh*);
    - variation occurs in the code, whereby more than one way exists to represent most sounds (e.g., *oa*, *ow* and *oe*); and,
    - overlap occurs, whereby some sound pictures represent more than one sound (e.g., *head* and *seat*).
iii. Multi-syllable management helps children read multi-syllable words by encouraging them to blend the sounds into syllables and then the

syllables into words. The spelling of multi-syllable words works on the reverse of this. The syllables in the word are identified and then each one is segmented.

THE STUDY

The aim of the study was to evaluate the effectiveness of Phono-Graphix in promoting the spelling and writing skills (see Note 1) of 16 primary school children designated as having moderate learning difficulties. The children were aged between 7 and 11 years and were attending eight primary schools in Northern Ireland.

Table 1: Spelling and Writing Data Collection Sources

Data Collection Sources	Data Collection Points
▪ *SPAR* spelling test (Young, 1998)	▪ Three stages: beginning and end of intervention and one year later
▪ Checking Individual Progress in Phonics (*ChIPPs*, Palmer & Reason, 2001)	▪ Five stages: September, December, March and May of the intervention phase and one year later
▪ Story writing samples	▪ Four stages: beginning, middle and end of intervention and one year later
▪ Classroom observations	▪ Five stages during the intervention phase
▪ Semi-structured interviews with the children, parents and teachers	▪ Three stages: beginning and end of intervention and one year later

The intervention phase of the study took place over one school year, with children receiving one hour of Phono-Graphix support each week for three terms. To assess the sustainability of reading and spelling progress, follow-up data were collected one year after the intervention had ended. At this stage, the three oldest children had just completed their first year in a secondary level school. It is important to note that, during the intervention period, eight of the children received further exposure to Phono-Graphix strategies, either as part of an in-school learning support group or as part of general classroom literacy practice. This continued for four of them during the post-intervention year.

A multi-source data collection approach (see Table 1) was chosen to ensure multiple perspectives on the key issues relating to progress. This approach accords with Patton (2002, p.13) who argued that the production of 'developing case histories of what the children can do and have done provides a more accurate and extensive evaluation.'

RESULTS

SPAR standardized spelling test

Having looked at a number of spelling instruments, *SPAR* was chosen because the gradual progression in word difficulty suited older children

Table 2: Results from the *SPAR* Standardized Spelling Test

			Intervention Phase			One Year Later	
		Chronological Age	Spelling Age (SpA)				
Pupils	Year	End of Intervention	Start	End	SpA Gains (months)	Spelling Age	SpA (Gains) (months)
1 *	7	10.11	6.03	7.05	+14	9.04	+37
2 *	5	9.09	6.00	7.04	+16	8.04	+28
3 **	5	9.00	6.05	7.06	+13	8.00	+19
4	5	8.11	6.05	7.02	+9	8.00	+19
5	4	8.10	6.02	7.01	+11	7.08	+18
6	6	10.09	6.07	7.09	+14	8.00	+17
7 *	5	9.03	6.01	7.00	+11	7.04	+15
8	7	11.09	7.01	8.03	+14	8.04	+15
9 **	4	8.00	6.02	7.00	+10	7.05	+15
10	4	8.11	5.09	6.07	+10	7.00	+15
11 *	6	10.10	8.04	9.00	+8	9.06	+14
12 **	4	8.10	6.03	6.09	+6	7.01	+10
13	7	11.00	7.02	7.06	+4	8.00	+10
14	6	10.10	6.05	7.02	+9	7.02	+9
15	5	9.03	6.00	6.08	+8	6.06	+6
16 **	6	10.08	6.07	7.02	+7	7.00	+5

*Children in tables 2, 3 and 4 who received additional in-school Phono-Graphix support
**Children in tables 2, 3 and 4 who continued to receive in-school Phono-Graphix support after the intervention phase

experiencing literacy difficulties. At the end of the intervention phase (see Table 2), nine children had made gains of between 10 and 16 months. Table 2 also shows that one year later 13 children continued to make progress. The most substantial gains were made by two children who had received in-school Phono-Graphix support prior to and during the intervention year. While this might have been an isolated result, it seems highly plausible that the in-school support had considerable impact on progress.

ChIPPs diagnostic phonics test

To achieve a more evolving and detailed picture of spelling progress, the *ChIPPs* diagnostic phonics test was used as this could be administered at different times during intervention. Although *ChIPPs* primarily tests reading ability, it was also used to assess the children's application of code knowledge when spelling words restricted to one-to-one letter-sound (e.g., *belt*) and complex letter-sound correspondences (e.g., *snow*).

Despite all of the children being familiar with some letter-sound correspondences at the outset of intervention, the initial results indicated an inability in applying this knowledge to assist spelling. Gains were recorded in writing words containing one-to-one letter-sound correspondences for all the children at the end of the intervention, with thirteen making quite substantial improvements of between 11 and 20 words (see Table 3). However, one year later only two children had made further, relatively small, gains. Both of these children had received in-school Phono-Graphix support during and after the intervention year. Examination of the underlying performances revealed that the drop in scores resulted from the children's persistent difficulty in distinguishing between the vowel sounds and the recurrence of some phonological spelling errors.

Table 3: Results from the *ChIPPs* Test (N.B. Children's numbers retained from Table 2)

	1:1 Letter Sound Correspondences					
		Intervention Phase			One Year Later	
		Start Version 1	End Version 2		Version 1	
Pupils	Year	Total (26)	Total (27)	Gains	Total (26)	Gains
3 **	5	5	25	+20	24	+19
2 *	5	5	25	+20	22	+17
9 **	4	6	19	+13	23	+17
12 **	4	7	21	+14	19	+12
14	6	0	20	+20	12	+12
8	7	11	24	+13	22	+11
15	5	1	16	+15	12	+11
4	5	11	24	+13	22	+11
5	4	5	20	+15	16	+11
13	7	7	21	+14	16	+9
7 *	5	6	17	+11	15	+9
10	4	1	13	+12	10	+9
16 **	6	14	19	+5	21	+7
6	6	13	24	+11	18	+5
1*	7	18	25	+7	22	+4
11*	6	21	23	+2	21	0

*Children in tables 2, 3 and 4 who received additional in-school Phono-Graphix support
**Children in tables 2, 3 and 4 who continued to receive in-school Phono-Graphix support after the intervention phase

Table 4 highlights the initial difficulties experienced by the majority of the children with regard to spelling words containing complex letter-sound correspondences. At the end of the intervention, substantial gains were recorded for the majority of the children from the four year groups. One year later all but two of the children continued to make gains or sustain their previous scores. For children with moderate learning difficulties, this is a very positive outcome. Again, the highest gains at this stage were made by children who had benefited from in-school Phono-Graphix support.

Table 4: Results from the *ChIPPs* Test (N.B. Children's numbers retained from Table 2)

	Complex Letter-Sound Correspondences					
		Intervention Phase			One Year Later	
		Start Version 1	End Version 2		Version 1	
Pupils	Year	Total (44)	Total (43)	Gains	Total (44)	Gains
2 *	5	0	21	+21	29	+29
3 **	5	0	21	+21	27	+27
4	5	0	24	+24	25	+25
8	7	2	22	+20	22	+20
12 **	4	0	14	+14	19	+19
9 **	4	0	19	+19	19	+19
5	4	0	16	+16	19	+19
1 *	7	6	24	+18	25	+19
13	7	3	19	+16	22	+19
16 **	6	5	16	+11	16	+16
7 *	5	0	16	+16	14	+14
14	6	0	14	+14	14	+14
6	6	6	20	+14	18	+12
11 *	6	20	31	+11	31	+11
15	5	0	9	+9	9	+9
10	4	0	7	+7	8	+8

*Children in tables 2, 3 and 4 who received additional in-school Phono-Graphix support
**Children in tables 2, 3 and 4 who continued to receive in-school Phono-Graphix support after the intervention phase

Writing samples

To offer an alternative approach to measuring progress, story writing samples enabled spelling to be assessed within a more meaningful context. Samples of writing provide the opportunity to assess writing quality, in terms of legibility, content, organisation, use of vocabulary and punctuation.

The initial story writing samples produced by the majority of the children were characterised by poor formation of letters, lack of spacing between words and the writing of unrecognisable words, illustrated in Figure 1 by Peter (fictitious name of child number 10) in his writing of

sewe (summer) and *toon* (train). A small number of children did have better spacing between words and some spelling attempts were more easily recognisable, evident in the initial sample for Paul (fictitious name of child number 4), reproduced in Figure 2. This sample reveals Paul's b/d confusion, evident in only a small number of the other children's samples. This confusion persisted, although to a lesser degree, throughout the intervention period. Punctuation, in terms of full stops and capital letters, was generally not used appropriately and consistently as the writing profiles in Figures 1, 2 and 3 portray. Although an improvement was evident at the post-intervention phase for Paul, this was not applicable to Peter.

Presentation quality improved throughout the intervention phase. The children's ability to produce more recognisable spellings resulted in stories being easier to read and this was generally sustained one year later. Although words were not always spelt correctly, many of the children were acknowledging all the sounds and representing these with plausible sound pictures such as *clok* (clock) and *beens* (beans) (see Figures 1, 2 and 3). The writing profiles also reveal the advances made in multi-syllable word spelling such as *amasmnts* (amusements), *tickits* (tickets) and *windo* (window). One year later, the spelling attempts of some children indicated a return to guessing occasional words, rather than using the Phono-Graphix strategy of sounding out, illustrated by Peter's writing of *cint* (climbed) and *trry* (threw) (see Figure 3). Many of the children confused the vowel sounds, especially sounds /e/ and /ɪ/ (see Note 2), illustrated in Figure 2 by Paul's writing of *vedeo* (video) and *bitir* (better). Although progress was made, vowel sound uncertainty persisted for some children.

The initial writing samples were generally short. A small number of stories appeared lengthy, but this resulted from the inclusion of repetitive phrases such as one child writing *heu haz a*…(she has a). These repetitions became less evident and had disappeared one year later. Content and organisation gradually improved during the intervention phase, and this continued one year later. Although few of the children expanded on particular aspects, some were willing to create their own characters and events when retelling familiar stories. For example, Paul's post-intervention story (see Figure 3) describes how

Jack *climd threw (through) the keyhole…and grad (grabbed) the peper (pepper) and threw it up his nose.* More descriptive words were used, illustrated by one child referring to his special person as *pefict* (perfect) and *respectid* (respected). One year later, the use of adjectives varied among the children.

Figure 1. Peter's Writing progress

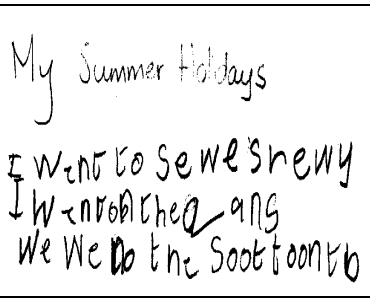
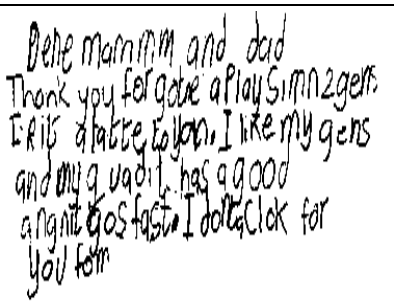
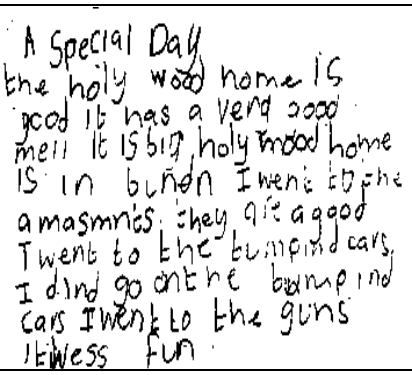
Intervention Period	
October (… summer scheme …quads … spook train too)	
January	
May	

Figure 2. Paul's Writing progress

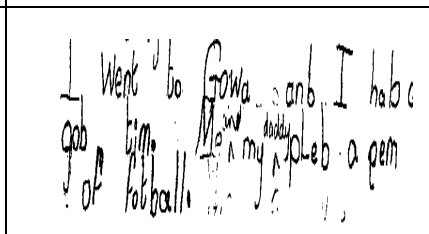
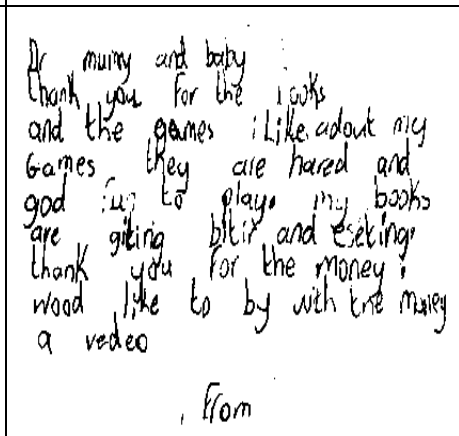
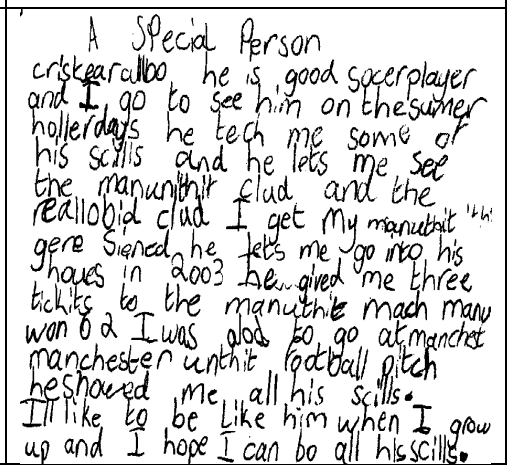
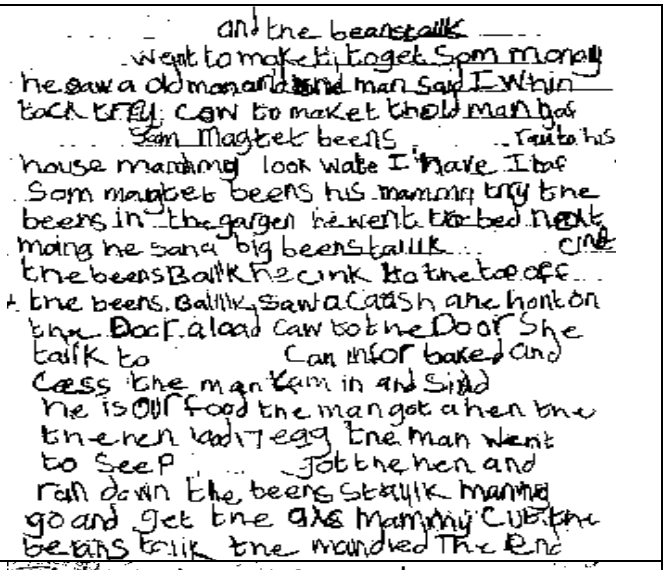
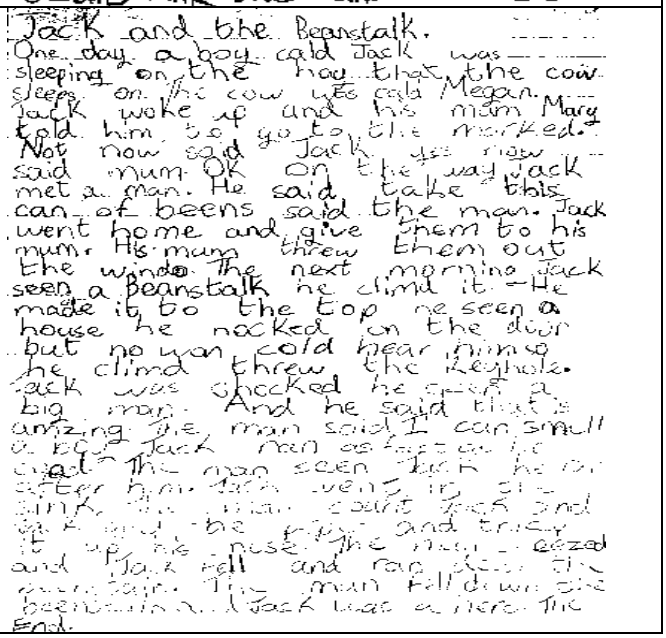
Intervention Period	
October	
January	
May	

Figure 3. Writing Progress: One Year Later

Peter	
Paul	

DISCUSSION

The results indicate that Phono-Graphix enhanced the spelling and writing ability of the participating moderate learning difficulties children, concurring with Brooks (2003, p.12) that highly structured schemes work best for children with spelling difficulties. It would appear that the successful progress observed was stimulated to some extent by what McGuinness and McGuinness call 'essential education' (2005, p. 27). Targeting the necessary aspects, the needs of the child, and how he or she can be most effectively helped to understand particular information in order to apply it, are crucial considerations. Learning is facilitated if children understand the reasoning behind something: it must, as Donaldson (1987, p. 24) claims, make 'human sense'. This resonates with the Phono-Graphix recommendation that children should start with the sounds with which they are familiar. The teaching of letter-sound correspondences and the skills of blending, segmenting and phoneme manipulation in the context of words, from the beginning of instruction, appears to help children understand the complex relationship between the printed word and speech. Whether this is the case is not proven in this research, but the evidence of progress gives some support to the claims.

The amount of information children have to learn in some approaches, such as letter names and letter sounds, rime endings, consonant clusters and phonic rules, and the ensuing confusions which may arise from this, can create barriers to progress, especially for children with moderate learning difficulties. Opinion is divided on the efficacy of these issues. For example, with regard to the focus on sounds only, the Rose Review (DfES, 2006) recommends teaching letter names while Solity (2003, p.20) argues that the teaching of letter names is futile, commenting that it should be introduced after sound application is fluent.

Letter-name knowledge is regarded by some as assisting the learning of letter-sound correspondences. However, Adams (1990) emphasises that it is pre-readers who recognise letter names with confidence, because they have been introduced to them at home. They then find learning letter-sound correspondences easier. In contrast, children with limited

pre-school experiences of letters are more likely to encounter problems distinguishing between letter names and sounds. In this study, some children demonstrated letter name and sound confusion, evident in their writing of *yag* (wag) and *slapt* (slept). In a study comparing the outcomes of children taught letter names and sounds to those taught letter sounds, O'Connor, Jenkins, Cole and Mills (1993) found that the only difference involved the letter-sounds group performing better in spelling. This alludes to the benefits of concentrating on letter sounds. Simply teaching the letter-sound correspondences and demonstrating how these can be used to spell words helped the children in this study to apply their letter-sound knowledge more flexibly.

Research by Dias and Juniper (2002), on the effectiveness of using Phono-Graphix in the early years, found that not combining onset and rime with phoneme acquisition resulted in greater success. A possible drawback of the onset and rime approach is that it has the potential to discourage some children from systematically working through the whole word. This was apparent in the initial spelling test whereby one child's spellings ended with *et* such as *pet* (pan), *het* (had) and *wet* (wag). This child's weekly spellings had contained the rime ending *et* and his spellings suggested that he considered all words must end with this.

By the end of the intervention period and one year later, the children's tendency to chunk initial and final adjacent consonants, which resulted in the phonological spelling error of sound omission such as *cap* (camp) and *sots* (spots), had largely disappeared. Sound omissions persisted in multi-syllable words, such as *moring* (morning), due to the majority of the children not having reached this level during intervention and therefore being unfamiliar with the strategies for spelling multi-syllable words. However, some children did progress to applying the Phono-Graphix technique of identifying and segmenting each chunk. For example, one child was observed explaining to a peer, and demonstrating with her hands, that the words *temple* and *people* have two chunks, and subsequently writing these as *templ* and *pepll*. This indicated the transfer of strategies taught within the learning support setting to the classroom context.

For many of the children in this study, their pronunciation of the vowel sounds, especially /e/ and /ɪ/, and /ʊ/ and /ʌ/ (see Note 2), caused persistent difficulties when writing words containing these. This was probably a significant factor in the regression observed for some children in spelling words containing one-to-one letter-sound correspondences one year after the intervention. The variation aspect of the code (more than one way to represent a sound) also produced problems for the children. Although the majority of the children continued to sustain the gains made by the end of the intervention period, with some making improvements on these, the lack of real progress at this stage suggests that these children need continuous, structured support. The relative success of those children with ongoing exposure to in-school Phono-Graphix strategies lends support to this. Difficulties retaining the numerous 'sound pictures' the variation concept produced, and selecting the appropriate one, impacted on the children's ability to spell more complex words. Wells (2001) considers that the code inconsistencies represent one of the main reasons why many find spelling difficult.

The measured spelling gains were not as favourable as those calculated for reading (see Note 1), primarily because of their correct-incorrect dichotomy. This prompts the important question of what constitutes spelling success for children with moderate learning difficulties. Akin to some of the spellings featured in the stories of *Winnie the Pooh* such as *aker* (acre), it is possible to apply Rabbit's reference to Owl to the children in this study: 'You can't help respecting anybody who can spell Tuesday, even if he doesn't spell it right: but spelling isn't everything, there are days when spelling simply doesn't count' (Milne, 2001). In this study, although children were not spelling the more complex words accurately, these generally contained all of the sounds and plausible ways to represent these such as *creem* (cream). This reflected a substantial improvement from their baseline spelling ability, which often produced unrecognisable words. It is not our intent to suggest that spelling accuracy is unimportant, but rather to acknowledge and appreciate the difficult journey many children with moderate learning difficulties have to make in order to produce recognisable spellings. Certainly, the spelling attempts of the children participating in this study as they progressed through the intervention period were to be 'respected'.

Using the Phono-Graphix spelling strategy and the children's increased confidence and independence, which arose from recognition of their success, appeared to enhance spelling and writing ability. The positive implications for such successful experiences cannot be underestimated, especially for those who have struggled with literacy. Increases in confidence and independence were captured in the interview data, illustrated by the following comments made by one parent and by one teacher respectively: "He just writes words independently, quite confidently." And "He will attempt unfamiliar words and he doesn't give up, which I think is brilliant… he feels he has success now."

CONCLUSION

The results from this study suggest that Phono-Graphix can help to improve the spelling and writing ability of children struggling with literacy acquisition. Focusing on sounds only and teaching these in the context of words from the outset, along with the key skills of blending, segmenting and phoneme manipulation, helped the children appreciate the importance of knowing and using the sounds of their language. The spelling strategy of segmenting words sound by sound, followed by writing the corresponding 'sound picture', raised awareness of what children can do with a little knowledge. The crucial element, though, will always be how teachers implement the strategies. Adams (1990, p. 239) describes how looking at a map to plot one's journey can make the route look relatively smooth and straightforward, while actually setting out on that route can prove to be 'slow and tortuous going.' Borrowing from this analogy, the research reported here suggests that if Phono-Graphix is implemented appropriately, it can offer children, especially those with literacy difficulties, a smoother route to achieving success in this area.

NOTES

1. The larger study focused primarily on reading and the results proved to be more positive than those for spelling. An overview of these may be requested from the first author.

2. Phonetic codes - /e/ as in b*e*d, /ɪ/ as in s*i*t, /ɒ/ as in t*o*p, /ʌ/as in m*u*d.

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