Teaching a current Reading Recovery student explicit phonology, blending and graphophonics improves segmentation of words into meaningful parts, reading accuracy and spelling.

ACTION RESEARCH PROJECT

ABSTRACT

Reading is a process which requires a wide range of knowledge and skills at different levels of text processing as explained in John Munro's MLOTP model of reading.

Current research indicates that children who are considered "hard to teach" still have problems at the word level.

As a result, these children have difficulty recognising and applying the skills of blending, segmenting, making analogies and visualising the phonemic symbols. They then also experience difficulty transferring and transcribing the phonological knowledge necessary for writing.

Overall, they have difficulty in the area of phonological awareness which hinders word attack skills and progress in reading and writing acquisition.

After a year of formal education, it is usually quite obvious if a child is making slow literacy gains and so, it is at this time when interventions of more explicit nature are necessary.

This present study aims to promote the effectiveness of explicit teaching of phonological knowledge, blending and graphophonics and how this would improve the skills of segmenting words into meaningful parts which in turn would improve reading accuracy and spelling at an early stage.

Two grade one boys were selected for this research because they were identified as making slow progress and needing further intervention which would complement the Reading Recovery intervention program already in place.

The study used a OXOXO design. The students were assessed before each intervention with the final intervention being that which is designed for this research.

The students were reading at very low instructional level texts and were displaying poor phonological knowledge and skills.

A grade one student was exposed to one on one explicit teaching.

The teaching targeted explicit instructions focusing on the phonological knowledge of single phonemes; onsets consisting of single initial letters, two letter consonant blends and digraphs; letter clusters and rimes. The skills of blending and segmenting were taught simultaneously.

After the explicit instructional intervention, the results from the data indicated that the experimental model significantly improved in word and prose reading with more accuracy. Data also demonstrated an improvement in spelling as the student was paying more attention to the print and what parts constituted the word. Data showed that the controlled model remained consistently stagnant with minimal progress. Close observations monitoring and all the results gathered from pre testing and post testing data confirms and supports this study's prediction.

Teaching a current Reading Recovery student explicit phonology, blending and graphophonics improves segmentation of words into meaningful parts, reading accuracy and spelling.

It is obvious that the implications of such explicit teaching of phonological knowledge and skills is crucial and if successful reading and writing acquisition is to occur, such intervention at an early stage is necessary and beneficial especially for students experiencing difficulty at the word level.

A well designed program that provides focused, explicit instructions on phonological knowledge and skills such as blending and segmenting will benefit not only the "hard to teach" children who are falling behind their peers but all literacy learners.

INTRODUCTION

Phonological awareness refers to a conscious ability to blend, segment, and rhyme or manipulate the sounds of spoken words. It encompasses all sizes of phonological units including phonemes, letter clusters, onsets, rimes and syllables.

Surprisingly, many children enter grade one with little knowledge of phoneme/grapheme relationship and letter cluster/pattern knowledge which consequently hinders progress in reading acquisition. They have little to no phonological awareness and as a result, these children have difficulty blending, segmenting, making analogies and visualising the graphophonics. *"Nearly one-third of children fail to understand the phonemic structure of our language or do not possess sufficient levels of phonological awareness to initiate the reading acquisition chain*." (Adams, as cited in Brady, Fowler, Stone & Winbury, 1994 as cited in Sylvia Barrus Smith, 1996).

By using John Munro's model of reading, *Multi Levels of Text Processing (MLOTP),* this study was able to understand further the reading process of hard to teach children in grade one and gain an insight into the specific literacy knowledge that these children need and the explicit strategies that are needed to teach them, in order to capture the essence of the intervention necessary to remediate the literacy difficulties that they have encountered.

The model shows that the reading knowledge comprises of the following knowledge components:

- Literacy knowledge
- Meta cognitive knowledge
- Existing knowledge

- Sensory knowledge

Within each of these knowledge components, there are the following three aspects:

- The literacy knowledge which is referred to as the ***what's*** of reading
- The strategies and actions which are referred to as the **how's** of reading
- The values and beliefs which are referred to as the **why's** of reading

In the **literacy knowledge** component, there are five levels of text comprising of:

- Word
- Sentence
- Conceptual
- Topic
- Dispositional features

For each of these levels, there are specific structural text features with specific strategies and values. In this study, the children in question have been observed and assessed. As a result, they have demonstrated difficulty at the word level whereby difficulties lie in the following phonological knowledge and skills areas:

- Identification of letters and letter clusters including digraphs, trigraphs, initial and final consonant blends, letter patterns and rimes.
- The blending of sounds to form parts of words and words
- The segmentation of words i.e. breaking up words into meaningful parts.
- Making analogies i.e. using letter pattern knowledge from one word to assist reading another word with similar patterns of onsets and rimes.
- Transferring and transcribing the knowledge and strategies necessary for writing.

The children have encountered the above mentioned difficulties in literacy due to their very poor phonological awareness. The children also demonstrated poor graphophonic skills due to a deficit in storing the visual symbols and strings of symbols which constitute words. Having established the causes, one can prepare to

teach with more precision to the child's needs in order to overcome the difficulties that are encountered in literacy.

"We need to teach to the causes and deal with the remediations which are the difficulties." (John Munro, 2005).

The Grade one children who fall into the above category of literacy deficit at word level will obviously have difficulty at the sentence, conceptual, topic and dispositional level and be prime candidates for a Reading Recovery intervention.

Most children enter a Reading Recovery Program with very poor literacy skills compared to those of their peers who operate at an average level in a mainstream within the curriculum.

However, many children enter a Reading Recovery Program at a dictated text level and through observations, it has been noted that teaching these children can become laborious and frustrating from the perspective that the children have next to no phonological knowledge and skills. It has also been noted that even though the Reading Recovery Intervention Program allows the difficulties in the reading acquisition gap to be narrowed, it does not seem to give these children **solid** foundations in word attack skills. The incidental, implicit instructions given are not explicit enough to assist the child to develop self efficacy when reaching a level of word reading whereby the child needs to go beyond the automised sight words and the semantics in prose. The program is not explicit enough for the children to be able to attempt solving a word in isolation or be able to segment and blend the meaningful parts of a word in order to read or write it.

"We have minimized the explicit teaching of phonics… We have provided massive opportunities for the child to make his own analysis by having him read large quantities of easy material giving him prompts that guide his word solving. And we have encouraged children to write down their ideas… Under these conditions most children have slowly but surely categorized the complex relationship of letters with the sound forms of words. (Clay, 1991)

This study supports that children need to be **explicitly** taught phonological knowledge and blending so that segmentations of words into meaningful parts can be made in order to solve an unknown word in isolation and in text. This awareness of knowledge and skill are fundamental to a student's ability to read and consequently write.

"Studies have clearly demonstrated that children who perform well on sound-awareness tasks often become successfully readers, whereas children who perform poorly on these tasks later struggle with word identification and spelling." (Adams, 1990; Blachman, 1984, 1989; Lundberg, Oloffson & Wall, 1980; Mann,1984, 1993; Share, Jorm, MacLean,& Matthews, 1984; Stanovich,1986;Vellutino & Scanlon, 1987;Wagner and Torgesen, 1987; as cited in Gary A. Troia, Froma P. Roth and Steve Graham 1998.)

A. Troia, Froma P. Roth and Steve Graham (1998) in their article Focus on Exceptional Children report the importance of including explicit training in phonological awareness skills to children as an integral part of reading and spelling instruction and state that it is an essential feature of exemplary early literacy instruction.

In support, other research findings indicate that "most children who receive such instructions make substantial headway in both decoding and spelling proficiency." (e.g., Byrne and Fielding - Barnsley, 1991, 1993, 1995; Fox and Routh, 1976; Solcum, O'Connor, Jenkins, 1993;Treiman & Baron 1983; Wiliams, 1980 as cited in Gary A. Troia, Froma P. Roth and Steve Graham, 1998.)

Overall, to read, we need to have both phonological and orthographic knowledge. As a developmental progress to learning to read, we need to know the sounds of our language from single phonemes to more complex units of phonology. These units of phonology include letter clusters, syllables, onsets and rimes and we need to know how to transfer and transcribe the phonological/phonemic knowledge into the orthographic knowledge, which is the visual aspect of language. Likewise, we need to know the distinct symbols of single sounds and sound cluster patterns in order to recognise and transfer them into words whilst reading.

Margaret Moustafa (1995) reports Glushko's (1981) suggestions that when readers store print words in memory, they store the orthographic and phonological counterparts together and when they encounter new words containing letter patterns and clusters like those in familiar words, they activate the phonological information stored with the orthographic information.

As already mentioned, the sound properties of a language not only consist of single phonemes but also of more complex sound units which are made up of combinations of letters which make up either a single sound or different sounds blended together as a sound unit. E.g. **igh** blended together makes the long vowel sound of **"i"** as in **night** and not **i-g-h** as separate phonemes. Similarly, the phonological three letter consonant blend unit of **spl** makes all three single sounds but they are blended together as a unit instead of being read **s-p-l** separately. These combinations of letters and sounds make up our letter cluster system. If we have an immature phonological/phonemic knowledge, we would not know how to recognise, read or form letter cluster patterns. As a consequence, our ability to blend and segment into meaningful chunks would be very limited.

Sylvia Barras Smith (1996) states that powerful convergence in phonological awareness research suggests solutions for the prevention of reading disabilities for children who appear consigned to reading failures and its consequences support studies that phonological awareness is vital to reading acquisition and that "phonological deficits explain a large majority of reading disabilities. " (Adams, 1990a; Liberman and Scantwiler, 1985, 1986, 1988a, 1988b; Wagner, 1988 as cited in Sylvia Barrus Smith, 1996.)

The present research aims to explore the influence of the independent variable of phonological awareness and its skills on children with limited literacy knowledge and skills at the early years level of grade one and that the explicit teaching in these areas are necessary for children to acquire the dependent variable of successfully learning to segment into meaningful parts in order to read and write.

Results from the Kirby, J R., and others document on Causal Path Analysis of Processes Affecting Early Reading indicated that *"Phonological analysis was the most*

powerful salient predictor of grade one reading and that the causal path was more plausible from analysis to reading than from reading to analysis". The findings also supported their conclusions that "phonological analysis is the most powerful cognitive variable determining early reading competency; and phonological analysis depends in turn upon earlier developing skills including phonological synthesis…"

This study also aims to promote that children on a Reading Recovery Program who are considered "hard to teach", can be extended further, given explicit instructions to phonology including the graphophonics and explicit strategies to blend and segment. This explicit teaching, along with their usual Reading Recovery time will improve the reading acquisition, reading accuracy and the graphophonological skill.

In addition, the present research aims to examine the effectiveness of explicit teaching of phonological analysis and synthesis to assist reading ability and writing/spelling.

PREDICTION

Teaching a current Reading Recovery student **explicit** phonology, blending and graphophonics improves segmentation of words into meaningful parts, reading accuracy and spelling.

METHOD

Design

The study uses a case study oxoxo design in which gains in word reading accuracy and writing accuracy are monitored for a child currently undergoing the Reading Recovery Program and receiving intervention with explicit instructions of phonology and phonological skills of blending and segmenting.

Participants

The participants are two grade one boys, aged six and currently undergoing the Reading Recovery Program who have a history of reading difficulty and who have been considered "hard to teach." The two students have both been on the Reading Recovery Program for five weeks intermittently and have made very slow progress and little literacy gains.

They both entered the program at unseen dictated text and Level 1 seen texts at very low reading accuracy rates. Their initial assessments were based on the observation surveys administered at the beginning of the year. The results are shown in the following Table 1:

Table 1 Observation Survey Summary

Participant	Letter identification	Sounds of letters	Concepts about print	Word reading	Writing vocabulary	Burt reading test	Hearing & recording sounds in writing
Student A **DOB:** 12/10/1999 **School:** St Francis of Assisi	40/54	17/28	13	14	6	5	16
Student B **DOB**: 1/2/2000 **School:** St Francis of Assisi	50/54	18/28	14	11	11	11	18

Student A– Running Records:

Text Titles		Errors / Running Words	Error Ratio	Accuracy Rate	Self-correction Ratio
Initial Assessment	**Date:** *18/02/06*	**Dictated**			
1. Easy	*Dictated seen*		1:100	99%	
2. Instructional	*Pets L1 PM Seen*	*2/32*	1:16	97%	-
3. Hard	*The Rock Pools PM L2 Seen*	6/49	1: 8	87.5%	6

Student B – Running Records:

Text Titles		Errors / Running Words	Error Ratio	Accuracy Rate	Self-correction Ratio
Initial Assessment	**Date:** *17/02/06*				
1. Easy	*Dictated Seen*		1:100	99%	-
2. Instructional	*Pets L1 PM Seen*	3/32	1: 10.6	91%	-
3. Hard	*The Rock Pools L2 PM Unseen*	6/49	1: 8	87.5%	9

Both children had very little phonological knowledge and awareness before entering the Reading Recovery Program.

Phoneme/grapheme relationship needed to be addressed and attention was focused on the link between the two aspects whereby the letters, sounds and their respective written symbols were explicitly taught over the first initial weeks of the Reading, Recovery Program. The children were also taught the short and long vowel sounds via a visual cue and instructed to use the short vowel sounds first when reading. They were also instructed that if this strategy didn't make sense to the word in question, they were to revert to changing the short vowel sound to the long vowel sound.

Once the phoneme/grapheme relationship was reasonably established, the children were taught to blend two sounds together beginning with V + C combinations making a two letter word. This was consolidated in both writing and reading using scaffolded levelled texts which consisted of these words. The two letter words covered in the unit of work which aimed to blend V + C together were as follows:

at	an	as	an	in	it	if	is
off	of	on	us	up			

The two letter word combinations of V+ C were then followed by two letter words with C + V combinations:

no	go	so	to	do	me	he
we	be					

Some high frequency words such as **her, the, and, here, where, for** were covered and the opportunity was taken to explicitly teach the following letter clusters from high frequency words in order to assist solving unknown words and learning some word attack skills of blending and segmenting.

ch	-ck	th	sh	ay	wh
	er	or	ing	ee	

However, time did not allow to consolidate letter clusters/ patterns or phonological skills on the Reading Recovery Program nor did the methodology of the program allow for these to be explicitly taught once the complete program was underway.

In addition, difficulties lay in the literacy deficit of the child's recognition and rapid naming of these small two letter units of words and letter patterns in larger word units. It was also noted that the skills of segmenting the parts of words into meaningful blended units and then blending the units to make a word were not applied. In other words, when the children were reading the word **'bit'**, it was still being sounded out

into single phonemes and not segmented into either a CV onset + C as in **bi + t** or a C+ VC rime unit as in **b + it** and then blended to say the word. They were either guessing the word or not attempting to read the word at all.

Through observations and further assessments, this study suggests that explicit teaching of phonological knowledge and skills are necessary to assist the children in making links between sounds, words and their orthographic counter parts in order to make any solid gains in reading and spelling words with more accuracy. The following table gives us further insight into the students' profiles including some educational history.

Table 2 Students' Profile

PROFILE	**STUDENT A**	**STUDENT B**
Model	Experimental	Controlled
Age of Birth	12 /10/1999	1 /2/2000
Gender	Male	Male
Grade	Grade One	Grade One
Sensory impairment	Nil	Nil
Behaviour / attitude character	• Quiet • Keen to learn and never objects to a challenge • Willing to have a go and takes a slight risk • Never gives up • Very focused • Well behaved • Wants to improve • Accepts any form of intervention • Is accepting of a challenge	• Quiet • Keen to learn but gives up easily and is not a risk taker • Low self esteem and confidence • Openly vocalises that it is too hard and that he doesn't know how to say words so puts up a wall • Tries to concentrate but it is all too overwhelming • Well behaved • Would prefer to chat about football

PROFILE	STUDENT A	STUDENT B
Family history	• Supportive parents who diligently follow up literacy homework.	• Supportive parents however inconsistent with follow up homework. • Parents separated • Some unsettling periods during the week and weekends depending of which parent has custody
Educational history – Prep	At the end of Prep, the teacher noted the following • Not utilising learnt skills, letter identification and pictures • Anxious about reading • An intervention program necessary for next year • Reading Recovery candidate • Audiological concern • Processing concern Individual learning plans were put in place in Prep.	At the end of Prep, teacher noted the following: • Literacy concerns • Possibility of a language assessment • Literacy support necessary for next year • Literacy development to be discussed in the new year. Individual learning plans were put in place in Prep.

Student A was chosen for the experimental model and Student B for the controlled model.

Both students were reassessed before commencement of this study and results still presented poor word attack skills. Regardless of some explicit teaching of phonological awareness, the children lacked the phonological skills to apply the knowledge; which suggested that eminent explicit and comprehensible teaching of knowledge and skills in the area was requisite to support these children in both reading and spelling.

A new set of assessments were administered using the following varied tests:

- Clay's Letter and Sound Identification Test
- The BURILIC Onset/consonant Blend Identification Test
- The BURILIC Letter Pattern Identification test
- Orthographic Recognition Test
- The BURILIC Phonological Test
- Sutherland Phonological Awareness Test
- Matching Spoken and Written Form of Words
- Rapid Naming Test
- Orthographic Processing for Words
- Learning an Orthographic Code
- Waddington Spelling Test
- Pseudo Word test / Letter Sound Decoding
- Rime Test
- The BURILIC Pseudo Word and Orthographic Reading Test * Post Test Only
- Running Records

In this study, I have listed some of my own teaching materials and resources which I have designed and developed for The BURILIC Program. (Appendix 9)

The components covered per teaching session are listed below and in sequence of delivery.

- The alphabet
- Letter cluster patterns
- Onsets including consonant blends and C+ V onsets
- Reading rimes with letter cluster patterns or letter cluster patterns + C endings
- Spelling
- Rimes including V + C / VV +C / V + digraph
- Make and break
  - letter patterns eg. **ee**
  - letter clusters + final constant eg **ee-t**
  - Initial C + letter cluster + final C eg. **m-ee-t**

- Elkonin Type Boxes
- Reading
- Word Game
- Metaphonemic knowledge – articulating what child has learnt

The ten intensive teaching sessions were delivered first thing every morning at 9:00am for 2 consecutive weeks with sessions lasting up to 60 minutes. As the lessons progressed, the sessions would become more intense and lasting longer. Some information of components was either deleted, narrowed or extended depending on the amount of work revised and how quickly the child absorbed the information. Some components needed brief revision and others needed more extensive consolidation.

The child was withdrawn from class during the literacy block. Sessions were conducted in the Reading Centre. The centre is a room shared by one other Reading Recovery teacher and other specialist staff.

The child was still attending the Reading Recovery Program everyday with me.This meant that I could monitor more closely the process of progress and consolidate the knowledge and skills taught in the literacy intervention session held earlier. The Reading Recovery Intervention would be held after recess between 11:45 a.m. and 12:00 p.m. giving a reasonable lapse of time between sessions for knowledge to be still freshly retained in the child's mind and for the child not to be too fatigued as to not be able to think and process clearly.

PROCEDURE

The focus of the lessons was to explicitly teach to blend phonemes in consonant blends, digraphs, C+V onsets, letter clusters, VC / VVC rimes and say their respective sounds. The lessons also focused on teaching the skills of segmenting and blending parts into words. These sound pattern links were also explicitly taught using onset and rime units to assist the student to visualise and differentiate the segments. The rime units sometimes had the same phonological rime but a different orthographic pattern.

The activities ranged in sequential order of difficulty and each session was scaffolded on the knowledge gained from the previous session and what the child already knew.

Revision was an essential aspect of the intervention program. The information from previous lessons was revisited at each session.

The first session was based on knowledge taught prior to the intervention, all of which is explained in more detail in the *Method* section. Every session thereafter introduced new information.

Reading short prose or levelled texts as well as reading rimes and random words were part of the intervention as was making and breaking words. Writing high frequency words which consisted of the letter clusters taught were included as were some CVC, CCVC and CCVVC combination words.

Games were included to break up the monotony of the sessions and to add some stimulating challenges about the information learnt. Articulating what was learnt concluded sessions.

Materials Needed

- Flash cards of letters in upper and lower case
- Flash cards of letter cluster patterns
- Posters of rimes ending in letter patterns
- Charts of onset consonant blends and CV onsets
- Charts on rimes with VC / VCV / V + Digraphs and Letter cluster + C
- Magnetic board and letters
- Paper to monitor spelling
- Elkonin type cards and counters
- Levelled texts
- Letter pattern workbook
- Word attack workbook
- Flashcards of random words with letter clusters/patterns used in the program
- Worksheets consisting of rimes with both initial letter onsets and two letter onsets
- “Better your score” mat for game

List of Letter Clusters / Patterns Taught

Children were both exposed to the Onset Consonant Blends and CV Onsets as well as the following diagraphs and letter clusters.

sh	ch	-tch	-ck	th	
wh	ph	er	ay		ee

Lesson 1	Revisit prior knowledge of the following letter clusters - sh, ch, -tch, -ck, er, ay, ee, wh, ph, th
Lesson 2	ea ar
Lesson 3	or / oor /ore ai
Lesson 4	ir / ing, ang, ong, ung
Lesson 5	oy / oi and jumping e
Lesson 6	all, oo / oo
Lesson 7	ou, ouse, ow
Lesson 8	igh, ie
Lesson 9	ell, ill
Lesson 10	Revise all letter patterns to date

LESSON PLANS

For the purpose of this study, the program has been used for a one on one teaching. However, the program can be devised to suit a group scenario.

The methodology of each component is further explained in this next section and is subject change according to children's needs, abilities and curriculum requirements.

Activity	Task Description	Time
Alphabet **Letters/Sounds** **Oral**	Teacher flashes flashcards of letters in random order to child and says • **What sound does it make?** • **What letter does it belong to?** • Children need to respond by saying sound and letter. After a few lessons, children will be expected to rapidly and automatically recite them. • Children revisit short and long vowel sounds by using visual cues of clapping for the short vowel sounds and outstretched arms for the long. • *Knowing their letters and sounds is a requisite for further teaching of phonological awareness as is the knowledge of which letters constitute a vowel and that vowels make both short and long sounds.*	**2 mins**
Letter Patterns **Oral and games**	• **Cluster Patterns reviewed in Letter Pattern Workbook.** • *High frequency words were used as cues for each letter cluster pattern to assist memory of sounds. (Appendix 7)* Teacher says **What sounds do these letters make?** If child forgets, teacher cues the child by referring to the trigger word. Child responds by saying the sounds or as modelled by teacher saying **er (sound)** like in the word **her** or **ee (sound)** like in the	**10 mins**

Activity	Task Description	Time
	word **see with your eyes.** • **Teacher randomly writes letter cluster patterns of previous session on a small white board and gets child to say them.** • **Teacher reviews letter patterns with flashcards to further consolidate sounds**. (Appendix 3) Flashcards can be randomly flashed or used as a **SNAP** or **CONCENTRATION** type game. *Children have then seen these clusters in a variety of ways. This variation is also good to give a stimulating challenge to the children* **a) Revisit letter patterns to which the child was exposed prior to the intervention or during intervention sessions in letter pattern workbook..** **b) Introduce new letter cluster/s in letter pattern workbook by writing the cluster/s and the corresponding trigger words.**	
Analogies / Onsets **Oral** **C = Consonant** **V = Vowel**	Explicit teaching of consonant blends and CV onsets. *(See examples of charts in Appendix10 &12)* Teacher teaches explicitly all the onsets beginning with **Consonant +L** or **Consonant +R.** Teacher will then proceed to **S + Consonant and digraphs.** (appendix 10) Teacher teaches how to blend two sounds together saying **b-l together says bl / b+r together says br / s+ m together says sm** and so forth for each unit block. Teacher needs to demonstrate the digraphs and teach children to recognise these combinations of letters as only one unit.	**10 mins**

Activity	Task Description	Time
	Teacher will also instruct explicitly the onset combinations of **Consonant + vowel.** This will be done in either two or three parts depending on how quickly the child acquires the strategy. (appendix 12) **ba – ha / ja – pa / qua – za** or **ba – ma / pa – za** With these onsets, some combinations will blend together and make two letter words eg. **to, ma and we**. Children will be taught to read all these combinations using the short vowel sound first and if a combination of letters also makes a word, they will be instructed to recognise this and blend the combinations and change the vowel to the long sound to say a complete two letter word. These words are highlighted on the charts in yellow.(appendix 12) *Children need to learn that they need to read using the short vowel sounds first when attempting words with CVC combinations*. All these onsets will be written in child's word attack work book for revision to be done in the session and at home.	
Rimes **Rhyming, blending and segmenting activities** **Oral** **C = Consonant** **V = Vowel**	Explicit teaching of • V+ digraph rimes • letter cluster rimes • Initial and consonant blend onsets + letter clusters + single final consonant ending. *See example of charts in appendix4* • Review blending initial sounds with letter patterns: using Poster Charts. Read in sequence using a single letter onset and then an initial consonant blend. (appendix 4) Note that the words on charts have been	**7 mins**

<table>
<tr><th>Activity</th><th>Task Description</th><th>Time</th></tr>
<tr><td></td><td>segmented into onset and rime and the segments are differentiated by different colours.

Many children are visual and seeing the segments in this way triggers the memory to the meaningful parts.

As lessons progress, randomly select words in columns on charts progressing from initial single letter onsets to initial two letter consonant blends. Only read in sequence the rimes of the new letter clusters introduced in the session.

When child is proficient, nearing the latter sessions, child reads rimes including letter clusters +single final consonant ending. (appendix 5)

Children will consolidate letter patterns in a more meaningful context and see where the segments of words lie in a more explicit form.</td><td></td></tr>
<tr><td>Spelling

Writing using the strategies of hearing the sounds, segmenting, blending and recording.</td><td>Teacher says a high frequency word which is a “ trigger” word (appendix7) with other word/s using the onsets, letter clusters and rimes taught in the previous sessions and child writes it on a piece of paper.

In the first session go over the phonological units already covered prior to intervention otherwise leave this section till the next session.

For Example
<table>
<tr><th>er</th><th>ee</th><th>-ck</th><th>ay</th><th>ch</th><th>sh</th><th></th></tr>
<tr><td>her</td><td>see</td><td>back</td><td>day</td><td>chip</td><td>ship</td><td></td></tr>
<tr><td></td><td></td><td></td><td></td><td>chop</td><td>shop</td><td></td></tr>
</table>
Please note child is only to write the words not the letter clusters.
This is done to practise linking and matching the spoken</td><td>10 mins</td></tr>
</table>

Activity	Task Description	Time
	phonological sounds to the orthographic patterns.	
Analogies Rimes **Oral and writing** **C = Consonant** **V = Vowel**	**Reading Rimes** Teach and revisit short vowel + C pattern rimes as endings to words. First teach by reading the different combinations blended together starting with the short vowel **a + C** on charts. eg. **ab, ad, ap** Then proceed to the next vowel combinations which are **e+C** eg**. eb, ed, em** and so forth. When the **V+C+jumping e** has been introduced, you proceed to read **a+C+jumping e** on charts. eg. **abe, ace, ade** and again proceed to the next vowel **e** eg. **ene, ete** etc. **Writing Rimes** Children are instructed to complete the rimes of V+C combinations. The initial consonant onsets and the initial two letter consonant blend onsets have already been recorded for the children and they need only complete the word by writing the rime. Eg. **c**ab, **d**ab Begin with letter **a** worksheet and complete worksheet, working on a column at a time(See Appendix 8a). Do a couple of columns in session and child can complete the rest at home. Since time didn't allow for children to do all the worksheet, I completed some of the tasks and then the child could read some in session and practice the rest at home. As the new sheets were distributed in subsequent lessons, a review of previous session work was done by randomly selecting the rime units to read. Worksheets with initial letter onsets were given first and then the worksheets with 2 letter onsets were given (See Appendix 8a). Sometimes these were given	**6 mins**

<table>
<tr><th>Activity</th><th>Task Description</th><th>Time</th></tr>
<tr><td></td><td>simultaneously nearing the latter sessions as time was running out. Once these are covered teacher can move onto V + Jumping E rimes (See Appendix 8b)
This activity also aims to activate the phonological and orthographic information. It also assists in building the children's word bank</td><td></td></tr>
<tr><td>Make and Break

Segmenting and blending

A= analogies</td><td>Teachers to use magnetic letters to blend and segment words into meaningful learnt parts. These words include initial consonants onsets and blends + letter patterns or short vowel sounds + signal final consonant ending. Teacher can interchange onsets and rimes or letter patterns within the words made.

Examples:

<table>
<tr><td>ash</td><td></td><td>her</td><td>see</td><td>an + A</td><td>ck</td><td>ar</td></tr>
<tr><td>bash</td><td></td><td>he</td><td>fee</td><td>an + A</td><td>ba ck</td><td>car</td></tr>
<tr><td>cash</td><td></td><td>her</td><td>flee</td><td></td><td>b ack</td><td>far</td></tr>
<tr><td>clash</td><td></td><td>er</td><td></td><td></td><td>back</td><td>are</td></tr>
<tr><td>crash</td><td></td><td></td><td></td><td></td><td>black</td><td></td></tr>
<tr><td>bash</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
</table>
Please note the bold letters represent the interchangeable magnetic letters.
This will assist children recognising sounds and sound units in words.</td><td>5 mins</td></tr>
<tr><td>Elkonin type Boxes</td><td>Teacher says a word with varying combinations of letters and the child needs to say the word out aloud an push a counter in a square every time he/she hears a sound. If the child hears ee or ch, he/she needs to push the counter only in one square. However, if the child hears two sounds like the consonant blend bl, even though the child has learnt it as a unit, he/she needs to recognise that there are two sounds in this unit and so pushes the counter into two</td><td>4 mins</td></tr>
</table>

Activity	Task Description	Time
	separate squares. This is to teach the children that even though we recognise that combinations of letters go together, we need to specifically understand how many sounds constitute that segmented phonological unit. This section is not introduced until the latter sessions. See appendix 6	
Reading	**Child reads scaffolded levelled texts using appropriate information and strategies taught in the session and /or reads words on flashcards with all combinations in a game called " Beat Your Score"** whereby the child reads the words and has to beat his number of word reading within a particular time. In this case one or two minutes were ample. *This will give teachers some indications as to whether the child uses the phonological knowledge and skills in context of a word and prose. This also gives the child the opportunity to apply what has been learnt.*	**5 mins**
Meta phonemic Awareness	**Teacher asks child what he has learnt and what he knows about letters and words.** *This is to assist the child's self efficacy of literacy awareness.*	**1 min**

Please note that words and the amount of words used for the make and break, Elkonin boxes and spelling components can be changed according to teacher design and child's needs.

The sequence and introduction of letter patterns can also be changed accordingly.

RESULTS

For post testing, the same set of assessments was administered with just a set of pseudo words added.

Results of Pre and Post testing for phonological and orthographic evaluation are tabled below:

Table 3 Pre and Post testing for phonological and orthographic evaluation

TESTS	STUDENT A		STUDENT B	
	Pre Test Results	**Post Test Results**	**Pre Test Results**	**Post Test Results**
Clay's Letter Identification Test	50/54	50/54	52/54	52/54
Clay's Sound Identification Tests	49/54	52/54	49/54	48/54
The BURILIC Onset/Consonant Blend Identification Test	0/29	29/29	1/29	1/29
The BURILIC Letter Pattern Identification Test	1/35	30.5/35	4/35	4/35
Dictation Test	28/59	55/59	50/59	50/59
The BURILIC Phonological Test	1	57	8	15
Sutherland Phonological Awareness Test	26	38	20	20
Matching Spoken and Written Form of Words	5/12	9/12	8/12	8/12
Rapid Naming Test 1	Zero errors in 55 seconds	Zero errors in 40 seconds	Zero errors in 75 seconds	One error in 60 seconds
Rapid Naming Test 2	Two errors in 55 seconds	Two errors in 45 seconds	Zero errors in 90 seconds	Zero errors in 85 seconds

TESTS	STUDENT A		STUDENT B	
	Pre Test Results	**Post Test Results**	**Pre Test Results**	**Post Test Results**
Learning an Orthographic Code	11	17	9	9
Waddington Spelling Test	6	11	7	11
Pseudo Word Test / Letter Sound Decoding	0	9	0	0
Rime Test	0/86	62/86	0/86	11/86
The BURILIC Pseudo Word and Orthographic Reading Test	0/35	20/35	0/35	2/35
Running Records	Instructional Level 3	Instructional Level 6	Instructional Level 3	Instructional Level 4 to 5

* See Appendix 14 for above results in graphic illustration in order of testing

Student A– Running Records:

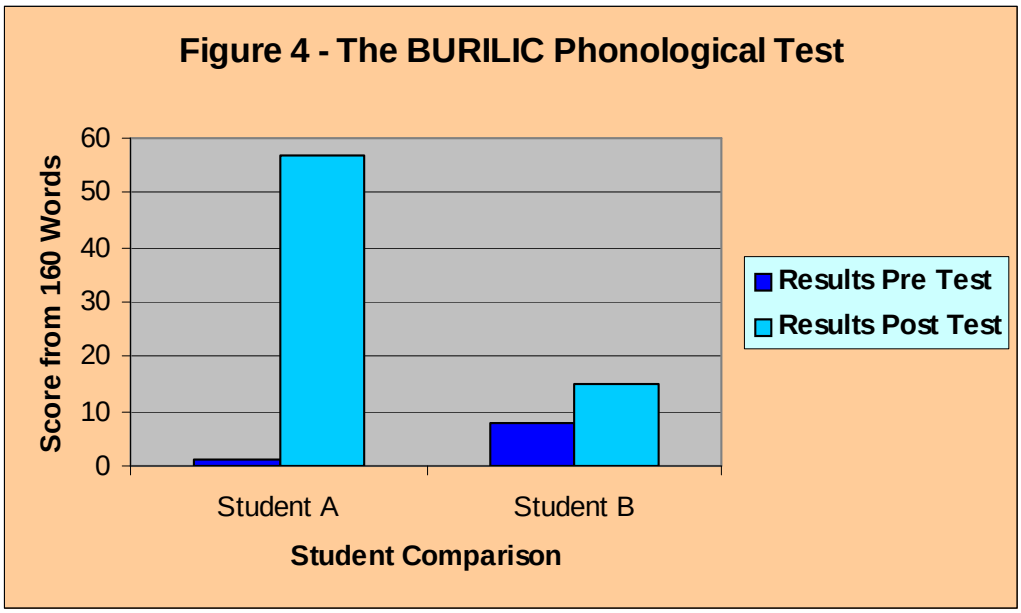
Text Titles		Errors / Running Words	Error Ratio	Accuracy Rate	Self-correction Ratio
Initial Assessment	**Date: 7/6/06**				
1. Easy	Hide and Seek L5 PM Unseen	1/111	1:111	99%	1:25
2. Instructional	Walk, Ride and Run L6 PM+ Unseen	8/116	1:14	93%	1:2
3. Hard	Choosing a Puppy L7 PM Unseen	22/155	1:7	85.5%	1:12

Student B – Running Records:

Text Titles		Errors / Running Words	Error Ratio	Accuracy Rate	Self-correction Ratio
Initial Assessment	**Date: 7/6/06**				
1. Easy	Tiger ,Tiger L3 PM Unseen	1/18	1:28	96%	-
2. Instructional	The Lucky Dip L4 PM+ Unseen Hide and Seek L5 PM Unseen	7/85 8/111	1:12 1:14	92% 93%	1:3 1:5
3. Hard	Walk, Ride and Run L6 PM+ Unseen	21/116	1:5	80%	1:21

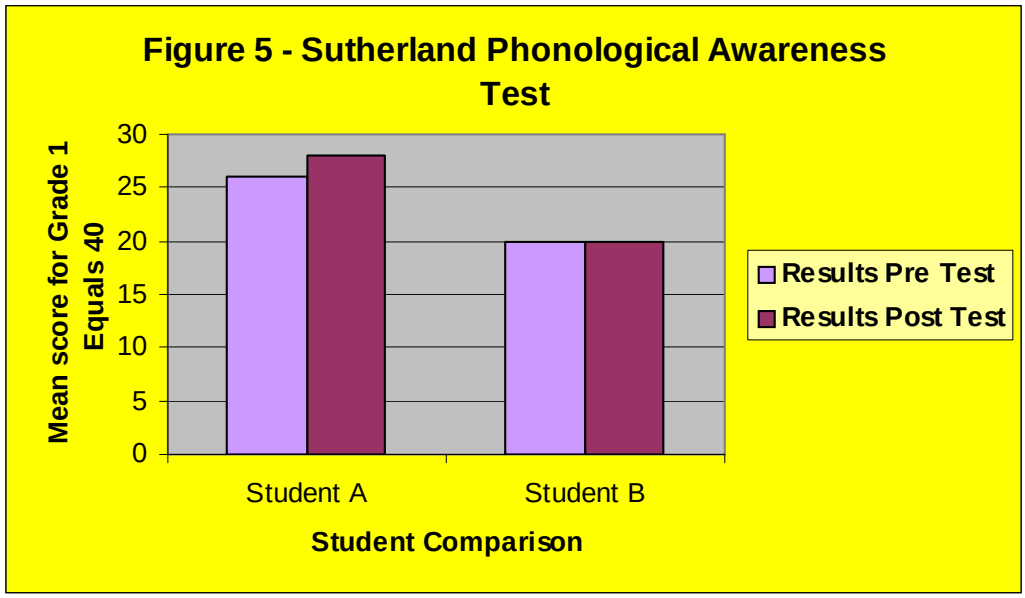
Results indicated that Student A improved significantly in all word tests. A marked difference was noted more in reading than writing. Student B, on the other hand, seemed to remain quite stagnant with minimal gains in both macro skills.

As evident, Student A and B had very poor phonological knowledge and skills prior to the intervention and very little understanding of blending and segmenting to rely on when attempting unknown words. However, Student A made substantial progress as compared to Student B by post testing as is indicated in Figure 4.

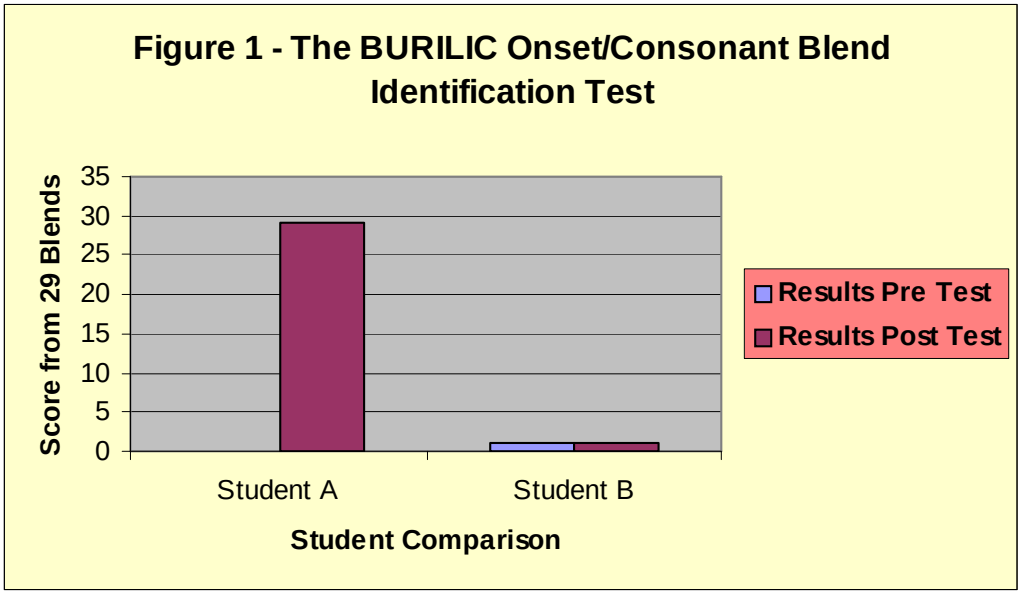


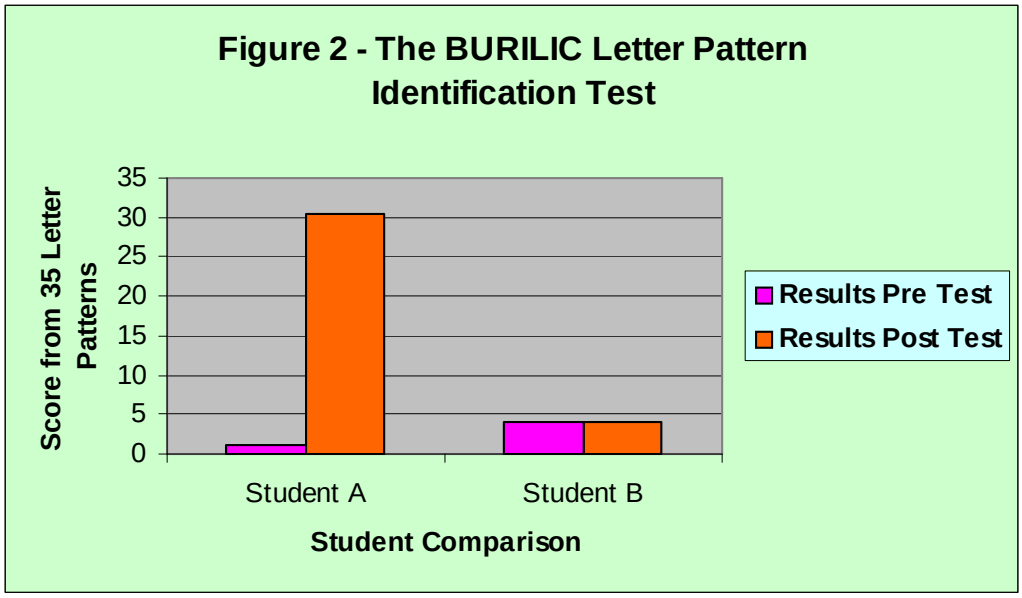
Student A at post testing attempted to blend initial sounds together and attempted to recognise the meaningful chunks in order to blend and read a word in all reading tests as opposed to just looking at the initial visual information and guessing the word as was done in the pre tests. More attention was given to segmenting and blending the printed word. The results in Figure 5 gathered from The Sutherland Phonological Awareness Test support these findings.

On the contrary, Student B was still very hesitant approaching new words and didn't understand the concept of blending, let alone segmenting.



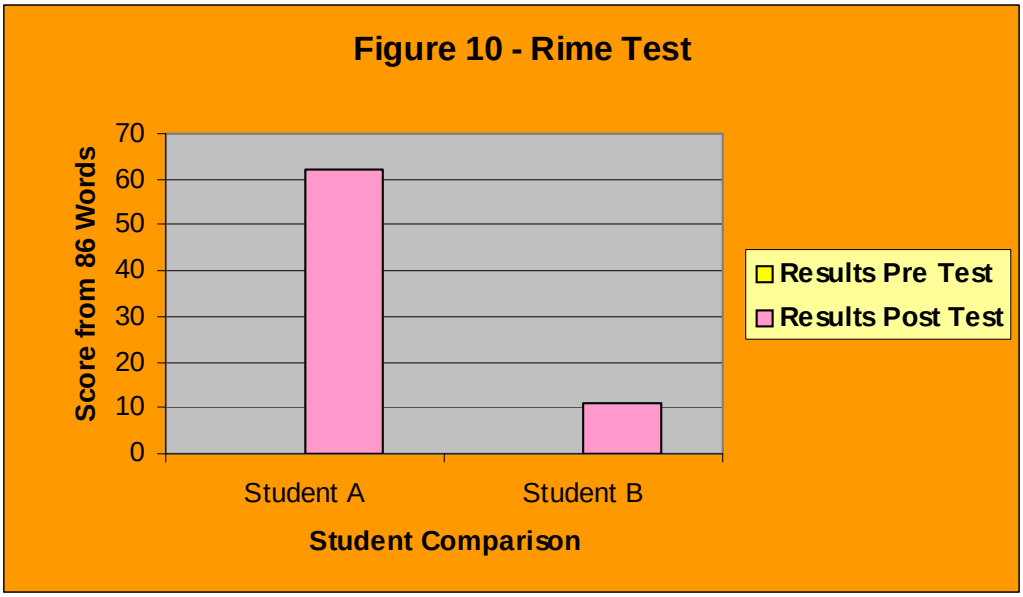
Student A didn't score on phonemic blends and only scored one on the Letter Patterns Test on pre tests. However, in post test, Student A could automatically name the blends and recalled 30 out of the 35 letter clusters covered. Instead, Student B remained on the same score in both pre and post assessments. He did attempt to say some consonant blends but proceeded to say the phonemes separately and did not know how to blend them together. Figures 1 and 2 show the marked growth in these areas for student A.





In the Rimes Test, Student A did not attempt and could not problem solve a word in the pre test. However, in the post test, he was able to read all rimes including CVC and CCVC combinations and the patterns explicitly covered in the intervention. The only ones which he had difficulty with were the **aw** letter cluster rimes as this was not taught. Difficulties also arose when a word ended in a final consonant blend which once again was not covered. None the less, a great attempt of blending and decoding the word was made.

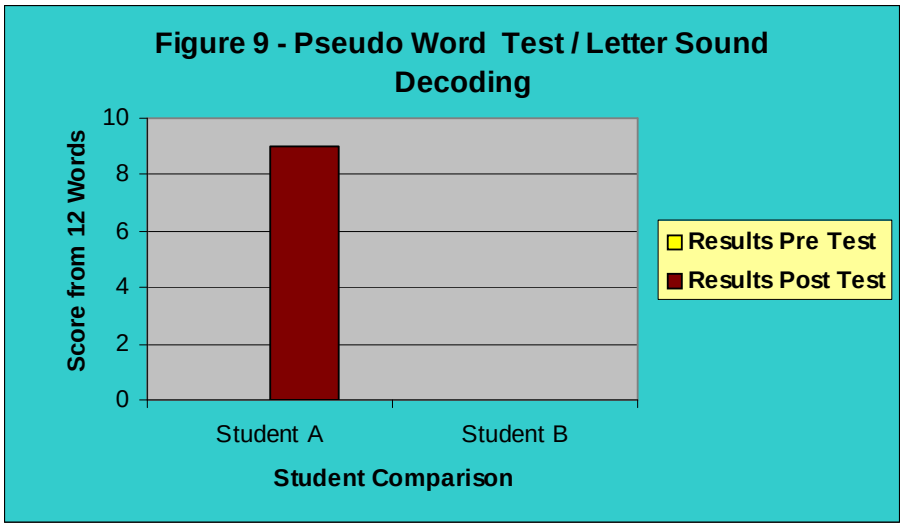
Student B based his knowledge on the base sight words which he had encountered in the Reading Recovery Program. This knowledge as is evident from data in Figure 10 was not enough to assist him to approach unknown words and read them with accuracy.

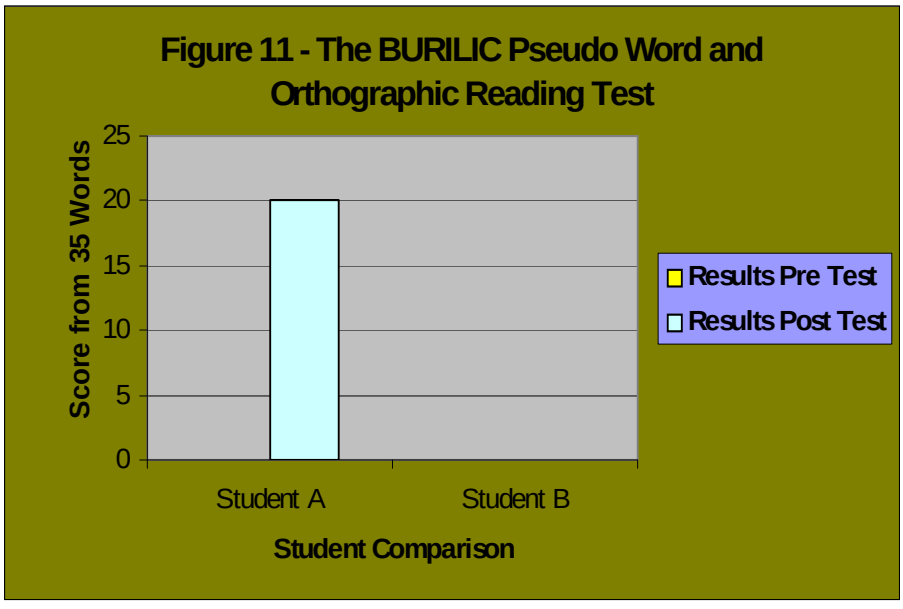


The results of post Pseudo Tests showed that Student A was using the phonological knowledge and skills which are required to read a word in isolation. From the post tests, it is obvious that there is still some confusions and that there is need of revision of some letter clusters and patterns.

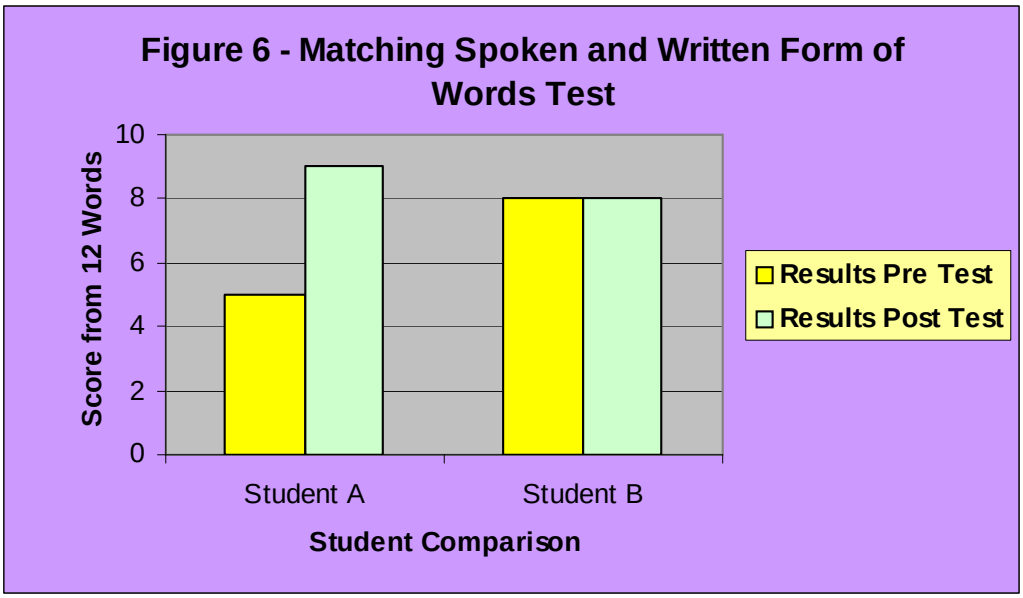
Student B was not able to attempt any of the pseudo words. However, knowing that Student B knew the word **all** and **but** I proceeded to instruct that he needed to put the initial sound and the unit **all** together to make the word **sall** and that **dut** was like the word **but** without the **b.** After some explicit instruction, Student B was able to read those two pseudo words.

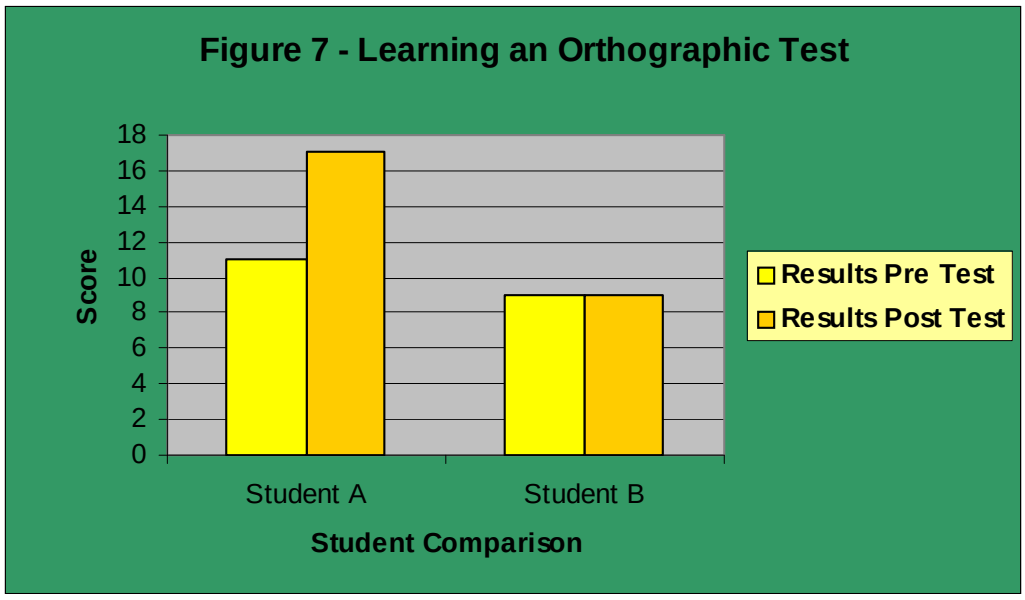
Figures 9 and 11 demonstrate the remarkable difference between one child having explicit intervention and the other not.





The matching of spoken to written form was improved for Student A as was the recognition of orthographic codes whereas Student B showed no sign of growth. Figures 6 and 7 demonstrate this.

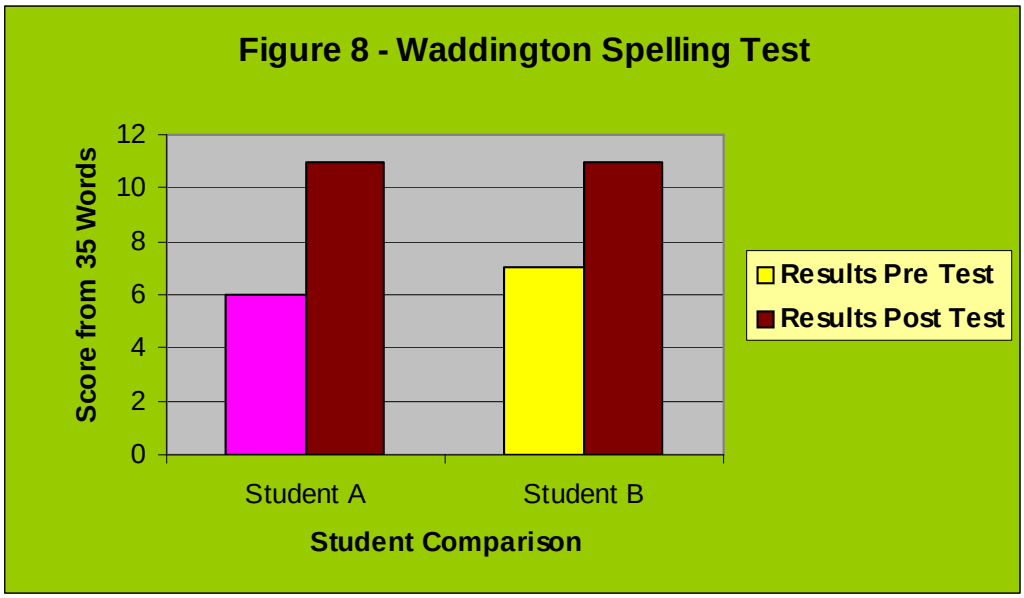


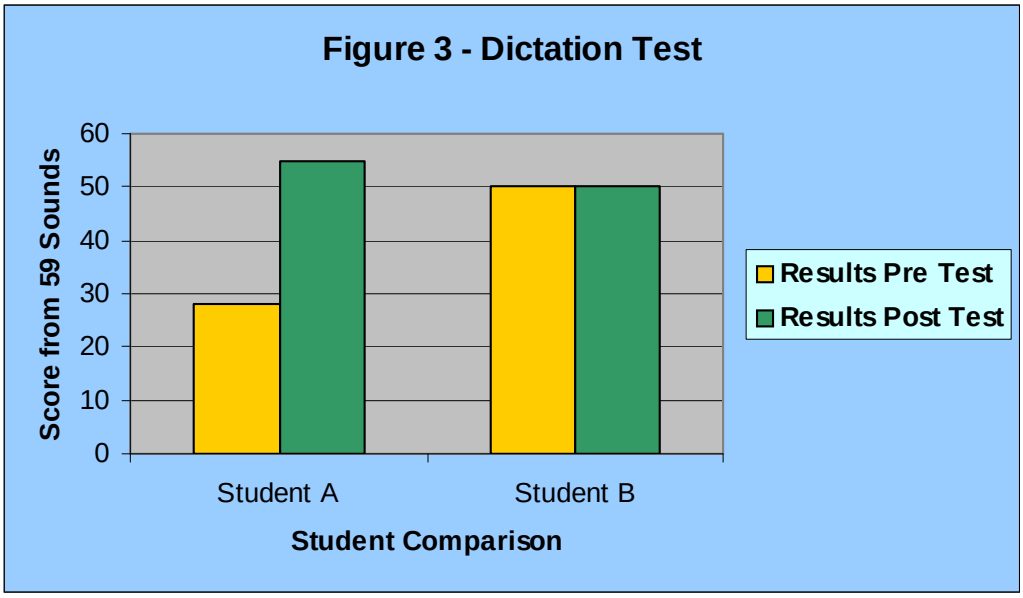


Student A 's spelling increased only by 5 from 6 to 11 in the Waddington Spelling Test. However, more words were attempted and more accuracy given to the written form even if they were not totally correct. Hearing the second consonant in a blend in a CCVVC combination or the first consonant in a final blend as in a CCVCC combination was more difficult than in a word with CVC and CCVC combinations for the obvious reasons of limited revision time and phonological development of such word aspects.

In the dictation test, the written prose for student A was more legible and when the student attempted writing, he was blending and segmenting and trying to transfer information into the written form. This is evident in the post score of 55 sounds recorded as opposed to the 28 in pre test.

Student B remained the same with his dictation score and increased his word spelling by 4 from 7 to 11. The results of the Spelling Tests and the Dictation Tests are shown in Figures 8 and 3.

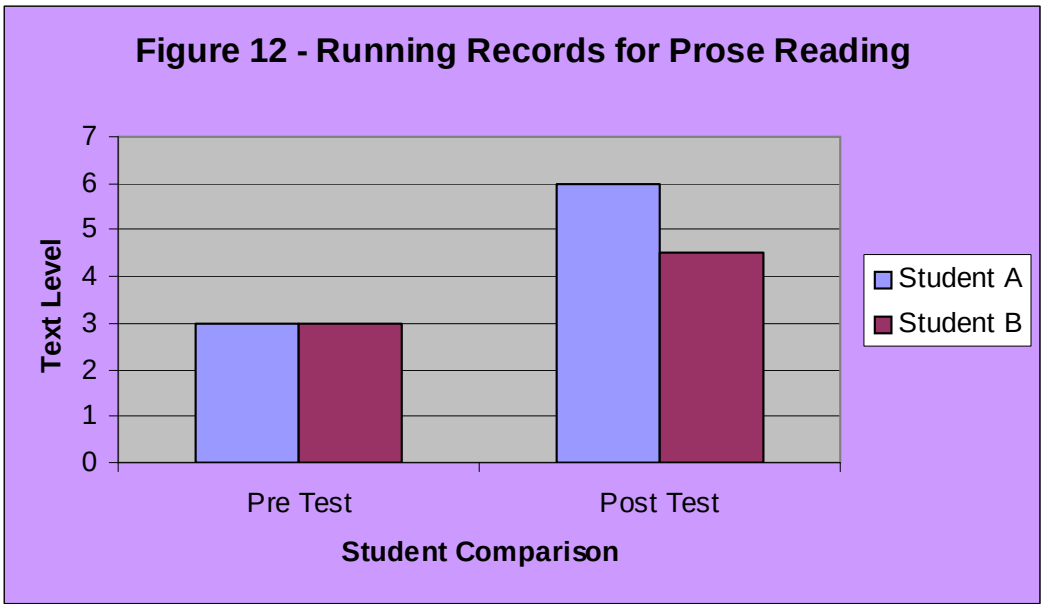




In as far as reading prose was concerned, Student A showed improvement in reading accuracy and overall reading. He progressed from an unseen instructional level 3 with understanding to an unseen instructional level 6 with understanding. Reading was phrased and fluent and pace was moderate with no meaning lost.

Student B also improved in reading from an unseen instructional level 3 to an instructional level 5 with understanding. Reading was also phrased and fluent and pace was moderate.

Percentage gains for reading accuracy were increased as were self corrections for both students. It is to be noted here that both children had Reading Recovery intervention during this period. Figure 12 shows the results from the running records testing.



Student A and Student B both showed improvement in their rapid naming tests. The results are shown in table 3.

When Student A was asked what he knew about words and reading after the intervention, his response was “I know words that I didn’t know. I know how to write better and more information to put in my book when I read.”

Further asked if there was anything else he learnt from working out words, his response was “How to sound out words; put two or three letters together and say them and then go back and say them together.

Student A had increased his meta-cognitive skills and was beginning to self manage and control some strategies. He demonstrated self efficacy as a result of the intervention. He also demonstrated a greater self confidence in his approach to literacy overall.

On the other hand, Student B was still grappling with many concepts and strategies. He continued to hesitate when reading and writing and a lot of positive reinforcements were necessary to lift his confidence during his Reading Recovery lessons.

There were a few confounding variables which affected both the intervention and the assessments.

A confounding variable for Student A was the fact that he was missing two upper front teeth and one bottom front tooth. Sometimes, when he was saying the word out aloud to hear the sounds, it was difficult to differentiate between sounds such as f, v, th, d, t, s, z, x. There were also still some confusion in letters such as g and j.

Another confounding variable was the change of time of intervention on two occasions due to a school mass and a school assembly. These also confounded on the child’s concentration.

Other confounding variables were the cold conditions in which the child had to work early in the mornings due to tripping of switches in portable rooms. As a result, the movement from the allocated room to the staff room was not very conducive to learning. Another important confounding variable was that the child was ill with nose and chest congestion for the whole of the intervention period; so much so, that the day after post assessments, the child took advantage and remained home. Positive results are to the child’s credit and that of his parents for persevering and being diligent with attendance and follow up work until the intervention was complete.

Student B was also confronted with a confounding variable of being sick and absent for three days during the intervention time.

There was also a confounding variable of illness from a month leave from work for the teacher implementing the design and intervention. This meant that the design and intervention had to be pre tested, implemented and post tested in three weeks as opposed to over a period of seven weeks as previously planned.

These variables inevitably impacted on the effectiveness of the program and the final results of post assessments.

All in all, however, very positive outcomes were achieved from the dependent variables implemented in the intervention. The formal data and the informal monitoring which took place over the intervention period and directly after showed that the learning trends supported the prediction of this research.

DISCUSSION

Word reading is developmentally progressive and readers all undergo a process through phonological development.

Above all, phonological development begins through oral language. This process entails imitating and pronouncing words and remembering how they are pronounced and what they refer to. Early language experiences including oral and aural tasks can have an impact on the development of phonological awareness. Children need to understand, hear and be able to engage in the language in order to begin the reading acquisition skill. Proceeding this is understanding letter and sound relationship and converting letters into single sounds and more complex units. Recognising this and then beginning to string and blend sounds together in words assists the reader to read a word. Words can now be segmented into meaningful parts. The word is progressively recoded from blends of sounds and segments of words until automaticity of the word is established. Once the word is automatically known and its phoneme properties understood, it is used as an analogy to solve other unknown words. When this process is understood, the reader can move onto more complex learning involving syllabification and the manipulation of stress patterns in multisyllabic words and also recognise roots and stems in longer words. Clays (1991) argues that a child's ability to use phonological information for letter clusters and the ability to analyse words in larger units makes for more efficient reading. All these trends in phonological development are linked with the development in being able to read a word.

According to Clay (2005) reading is "a message-getting problem solving activity and writing is a message –sending, problem activity. Both activities involve linking invisible patterns of oral language with visible symbols."

This research identifies the problem that the children have not been explicitly taught or not acquired the knowledge of phoneme/grapheme relationship to further be able to be instructed on more complex phonological units which constitute a word and hence also not be able to link their orthographic forms.

Due to this, these at risk “hard to teach” children would be floundering if not totally locked in a zone where only failure could be successful, if teachers proceeded to teach onsets/rimes and letter clusters or take for granted that these children would simply learn to analyse and synthesise words incidentally and pick up bits of information within the mainstream without specific teaching.

Two important reading and writing skills for children to acquire are blending and segmenting with solid knowledge of sounds. Children need to be proficient in analysing sounds in words and synthesising sounds in words. These children need to learn the sound properties and how to blend single phonemes together and how to blend phonological units together and string these all together to make a word which matches the spoken language. These units, which consist of letters making a single sound or different sounds, constitute meaningful parts that can be segmented and blended to make a word.

This study matches that of Sylvia Barrus Smith (1998) who states that both blending and segmenting are pre-requisite phonological awareness skills for reading acquisition. In her study the results indicated that “Children in the experimental groups performed reliably better on phonemic segmentation fluency, onset recognition fluency and blending at post test than children in control groups,” and that children in the experimental conditions outperformed children in control conditions on phonological awareness. Sylvia Barrus Smith (1998) found that systematic phonological awareness was responsible for the progress.

In this study, the data has shown strong support for the hypothesis that explicit phonology, blending and graphophonics were responsible for the successful process of the segmentation of words into meaningful parts, reading accuracy and spelling.
Student A with intervention showed significant improvement in his word reading and phonological awareness whereas student B showed very little progress in these areas.

Student A was no longer saying single phonemes and guessing the word. Data confirms these findings. Knowing the rime for letter cluster patterns and other rimes also improved the ability to transfer information from known words to unknown words.

As a consequence, spelling was also inevitably stronger. Data also supports these findings. After the intervention student A was able to hear and record the phonological units in a word and write the words by blending and segmenting the parts not just in words consisting of CVC but also words with CCVC, CVVC and CCVVC combinations.

Student A's knowledge of single phonemes was consolidated and awareness of blends, letter clusters, and letter patterns was significantly increased. With this increased knowledge, there was a greater awareness of segmenting the word into meaningful parts and blending it to make a word. The awareness of chunking letter patterns into onsets and rimes was also more evident. However, further consolidation would be necessary to maintain the level and enhance the level of proficiency in all these areas of knowledge and skills.

Student B did not further his phonological knowledge and did not know how to blend and where to break up a word. His analysis and synthesis of words was not developed.

The Pseudo word tests confirmed these findings. They were a challenge for both the students and the instructor as these would show how the teaching of explicit phonological units would assist the skills of blending and segmenting. The results were very pleasing and indicated such ability after explicit instruction. Poor results were gained with no intervention of explicit teaching.

Student A also exhibited some knowledge transfer at text level as indicated by data. At point of difficulty Student A was blending and segmenting the phonological units to make a word which fit into the semantics of the texts. Word reading accuracy and rate of reading increased. Student B also showed progress in this area but was using the ability of recalling sight words more and reading the picture cues. Once he came across a word which was unfamiliar, it was evident that he had limited phonological knowledge and skills to problem solve it. It must be reiterated that the children were still both undergoing the Reading Recovery Program and so a growth in this area was to be expected.

There was growth in Student A's confidence when confronted with reading and writing. Student A hesitated less when approaching unknown words in both macro skills whereas Student B still hesitated and needed to be prompted as he was not able to use the strategies unassisted like Student A.

It must be noted, though, that Student A only hesitated when trying to retrieve information in stored memory to process it and transfer it to the spoken word. At times, this hesitation to process also took place when spelling words. In fact, it was much more obvious in writing than in reading. An overload of information in a short period of time could be the reason for this or the fact that retrieval process and awareness are independent to one another.

Sylvia Barrus Smith (1996) states that there is evidence to suggest that retrieval processes and awareness are independent and that awareness is less complex than encoding and retrieval in the demands it places on memory and processing.

Results from phonological research processes indicate *that "…processing the phonological features of language explain a significant proportion of beginning reading problems."* (Liberman and Shankweiler, 1985; Lyon, 1995; Mann and Brady, 1998; Rack et al.,1992; Torgesen et al., 1990; Wagner and Torgesen, 1997 as cited in Sylvia Barrus Smith, 1996).

As mentioned, retrieval of information was not quite automised for Student A which interfered with the phonological skills and as a result, there are implications and further research could include one or more of the following:

a) More intervention of same to revisit and consolidate phonological features/knowledge and skills;
b) Dilute the program with amount of information and extend the period of intervention over a term or so.
c) Implement an additional component in the program which includes more intense explicit instruction to facilitate the rapid naming skill.
d) Increase intervention times per week.
e) Decrease the time per session and increase the time of intervention per week.

f) Consider including and implementing in the classroom a specific program as in the intervention or at least components thereof.

Sylvia Barrus Smith (1996) supports the notion that while rapid naming may not be agreeable to instruction as is phonological awareness, the deficit is important to identify early because a child with both awareness and retrieval deficits may require more intense instruction over a period of time.

This study especially supports the latter of the above suggestions, that is, to implement in the classroom a specific program as in the intervention or at least components thereof. It is fair to say that whilst some students progress well in a normal classroom instruction, it is apparent that some necessitate a different and more specific approach. It is a fact that this explicit teaching in phonological awareness and skills has not been used within the classroom setting and that to consolidate further and enhance these aspects a specific program or principles of a particular explicit instructional program would be in favour for the child to continue to make successful literacy gains in reading and writing. “To effect research into practice, it is also critical to determine the feasibility of small group instruction in phonological awareness with regular classroom support and whether children who do not progress within the average length of intervention need more, or some other instructional variable or combination of variables, or other curricula.” (Blachman, 1994 as cited in Sylvia Barrus Smith, 1996)

Sylvia Barrus Smith (1996) identifies explicit systematic phonological awareness instruction as the main reason for why her experimental group outperformed children in control conditions on phonological awareness skills.

Also, from her results Smith argued that more intense instructions needed to be provided in the normal classroom for children who were low in phonological awareness.

From close monitoring and observation, the skill of segmenting was more challenging for Student A to recognise than the skill of blending even though it was noted that the two skills were both necessary in the strategic method of trying to decode a word.

However, it is with conviction that I state that unless the phonological knowledge was attained the skill of segmenting into units would not prevail to then be able to blend those meaningful parts into words.

"Segmentation appears to be more difficult for students low in phonological awareness than blending." **(** O 'Connor et al.,1993, Torgesen et al., 1992, Torgensen and Davis, in press as cited in Sylvia Barrus Smith, 1996).

It is understood that both the skills of blending and segmenting into meaningful phonological features, that is, units of phonemes, initial and final consonant blends, CV onsets, letter clusters and rimes with VC, VVC, VVCC combinations, all assist in the reading acquisition and the orthographic aspects of literacy.

Each of these components seems to go hand in hand as is conclusive from the data of this study and other research. *"Segmentation training in isolation or in combination with blending instruction yields positive effects on reading achievement, although blending training alone seems to be of little value unless children already know how to segment."* (Fox and Routh, 1976; Torgesen et al., 1992 as cited in Gary A. Troia, Froma P. Roth and Steve Graham, 1998).

Clay (1999) states that *"…good readers read in chunks…"* and that *"…they notice larger chunks of information including clusters of letters. The larger the pronounceable units a child can discover and use, the less learning effort will be required."*

Researchers' findings from controlled groups demonstrated gains in reading acquisition over controlled groups when taught phonological blending and segmenting according to Bradley and Byrant, 1985; Cunningham, 1990; O'Conner, Jenkins and Slocum, in press; Torgesen et al., 1992 as cited in Rolland and E. O'Connor, 1995.

Hence, we need to be able to blend and segment to enhance reading acquisition but to know where the segmentations occur is important and given explicit instruction on the phonological units as segments is a crucial piece of literacy information to assist and enhance word attack skills. Therefore, knowing and recognising the phonological

knowledge of what constitutes the meaningful parts to be segmented and then blended to make a word is a skill in word attack which enables readers to read words in isolation and in continuous text. This information can also be used and transferred to written text once the phonological knowledge, skills and strategies have been stored in memory. As Clay (2005) reports, literacy processing needs to occur to assist us in reading and that in this process, networks are created in our brain linking things that we see as in the print on the page and things we hear as in the language we speak and that messages flow in and out of those networks allowing us to read and write.

From this study, it is clear that those students who are having literacy difficulties in grade one in the areas of reading and spelling need effective and efficient interventions at a very early stage. Intervention needs to occur and it needs to be explicit in instruction. It needs to include phonological awareness, knowledge and skills. If this doesn't occur, we shall be faced with Grade one children who will have a greater probability of encountering difficulties in subsequent grades in both reading and writing.

"Because of the established casual relation to reading, it is important to identify early and intervene early in phonological awareness." **(** Blackman, 1994: Lyon, 1995; Torgesen et al., 1994 as cited in Sylvia B. Smith, 1996).

"Studies have demonstrated that children who perform well on sound awareness tasks often become successful readers, whereas children who perform poorly on these tasks later struggle with word identification and spelling." (Adams, 1990; Blackman, 1984, 1989; Lundberg, Olofsson, and Wall, 1980; Mann, 1984, 1993; Share, Jorm MacLean and Matthews, 1984; Stanovich, 19o86; Vellutino and Scanlon, 1987; Wagner and Torgesen, 1987 as cited in Gary A. Troia, Froma P. Roth and Steve Graham.)

Therefore, it is possible to affirm from this research that teaching explicit phonology, blending and graphophonics at a very early stage for literacy at risk children in Grade One improves segmentation of words into meaningful parts which in turn improves reading accuracy and spelling. An intervention as such also complements the Reading

Recovery Program. This research also suggests that explicit phonological knowledge and skills need to become part of some other intervention programs or need to be aligned with them.

In support of this, Gary A. Troia, Froma R. Roth and Steve Graham (1998) noted that research findings indicated that the majority of children made substantial headway in both decoding and spelling proficiency when receiving explicit instruction. In the article, Focus on Exceptional Children by Gary A. Troia, Froma R. Roth and Steve Graham (1998) went on to report that although their article focused primarily on the assessment and teaching of phonological awareness skills to children who do not readily acquire those skills, the importance of including explicit instruction in phonological awareness was an integral part of reading and spelling for all children and that it was a necessary and a vital feature of exemplary early literacy instruction.

Possible future directions from the line of this study's hypothesis would be to put in place the same intervention over a 20 week period of a Reading Recovery Program and compare it with one that does not have an explicit instructed phonological program complementing it. Another possible direction to take would be in targeting a similar research to children who are not considered at risk who work along the average continuum of literacy means or above it and who are not involved in any other intervention program and see if the results would make a difference and bring these children to the proximal level of their literacy development.

This dissertation and study promotes phonological awareness skills including blending and segmenting into meaningful parts as compelling skills for reading and writing and promotes the knowledge of how these skills work as an empowering resource for all literacy learners.

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