DOES PHONICS INSTRUCTION IMPROVE PHONICS AWARENESS, READING AND SPELLING?

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Summary

This thesis looks into the teaching of phonics to answer the question:

Does phonics instruction improve phonics awareness, reading and spelling?

A mixed methods action research approach was taken to ascertain if phonics instruction would improve participants' phonological awareness, reading and spelling. The students who participated in this research were adult Emirati students who had completed their schooling and were now enrolled in the largest higher educational institute in the United Arab Emirates. They were in their first semester of a foundation programme. A pilot study was done which was fundamental in the changes made to the material that would be used for the phonics instruction and the material used for data collection.

Thereafter, for three semesters, two groups of students were allocated per semester to participate in the research, one group was given phonics instruction and one group received no phonics instruction. Apart from the phonics instruction all participants were on the same programme. Tests were carried out at the beginning of the semesters and the end of semesters on all participants. Unfortunately, this research was stopped abruptly because of a no paper on campus regulation that was brought in to force. Ideally, another two semesters would have allowed for more data collection. However, the data collected was sufficient to carry out a thorough analysis of individual classes and finally combining the classes into the treatment group (the participants that received phonics instruction) and the comparison group (the participants that did not receive phonics instruction). Moreover, there was sufficient data to carry out a statistical analysis.

The findings suggest that there was not a significant difference between the scores of the treatment group and the comparison group in the final phonics awareness, reading and spelling test results, but the improvement level of the participants that received phonics instruction (the treatment group) was higher than the participants that received no phonics instruction (the comparison group). Further research would be required to ascertain whether phonics instruction would improve phonics awareness, reading and spelling in other English Second Language speakers. This research was limited to Arabic speakers and all participants were Emiratis.

Key words: phonics instruction, phonological awareness, reading, spelling.

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1   Chapter 1 – Introduction

The debate on whether phonics instruction should be given when teaching reading has been ongoing for decades and it is still a matter of controversy, and it goes further as to whether synthetic phonics is more effective than analytic phonics. This topic is discussed in Chapter 2. The majority of the research in this area has been limited to young children; however, my interest is in giving phonics instruction to adult learners living in the United Arab Emirates (UAE). The interest in this area was motivated by learners in UAE themselves. Whilst teaching in the same institution where the research for this thesis was carried out I was introduced to phonics being brought into the lessons in a presentation given by a colleague, from another campus, who found his students were intrigued by the subject. I noticed that the students had a low literacy rate and that the students found grapheme and phoneme correspondences difficult to comprehend. When an opportunity arose where phonics were discussed, these were what researchers call *incidental moments* that are discussed in Chapter 2, the students became engrossed and showed interest in learning more. I then started including phonics in some of the lessons and these moments inspired this research.

Empirical research done in the UAE, discussed in Chapter 2, point out that Arabic learners use visual rather than grapheme/phoneme processing when identifying words. The learners that participated in this research are working towards achieving International English Language Testing System (IELTS) 5 to enable them to then study a degree after they have completed the Foundation Programme. They are expected to read ESL graded readers at starters' and beginners' levels with 300-500 basic headwords and an average of 800 words per reader. The average student should read 10000 words in a 16-week term. In the programme they use the MReader programme to engage in extensive reading. The background of the students is that the majority of them are public schooled and have had little exposure to phonics instruction in their younger years and they have very little interest in reading. They are in their first year at the institution and most of the students have just left school. The institution, described in detail in Chapter 3, is the largest institution in the UAE, and has programmes at Diploma, Bachelor and Master level.

In Chapter 2, I refer to research that has been done in the UAE by researcher/teachers who discuss Arabic learners and the difficulties they face which were similar to the difficulties the participants in this research faced. Research done outside the UAE, also discussed in Chapter 2, concludes how important and beneficial phonics instruction can be with regard to phonics awareness, reading and spelling, however, there are broader perspectives regarding phonics instruction taken into account in the discussion.

1.1   The rationale for the present research into phonics instruction

This research is to ascertain if phonics instruction will improve reading skills through recognition of phoneme/grapheme correspondences, with the ultimate goal being to benefit Emirati students in the institution and beyond. The adult Emirati students in this research had not had the phonics instruction that most students receive in education today and at the time of conducting this research there were not many adult phonics programmes available to my knowledge. Should the findings of this research indicate that phonics instruction is beneficial, both the teachers of the participants and the Director of the Institution, would include systematic phonics instruction in classes and ultimately within the curriculum, thereby adding to the enhancement of the teaching practices in the institution. The participants themselves were given the opportunity to give their perspectives as to how they thought the phonics instruction would benefit them with regard to learning and teaching of phonics. Prior to this research being conducted phonics instruction in the institution had only been given during *incidental moments* as mentioned earlier. This research is different to other research carried out in the institution because there were specific classes designated to phonics instruction during the semester. This research was not in any way associated with one topic of debate with regard to phonics instruction that has been ongoing for decades, which is which approach of phonics instruction is superior, analytic or synthetic and more? The choice of systematic synthetic phonics was purely associated with the fact that I was familiar with this method and was able to experience hand on observation of instruction being given. Therefore, this research was intended to contribute to the enhancement of teaching practices in the institution to the benefit of the students with the possibility of these practices being shared with other campuses. Secondly, this research was conducted from the action research (AR) perspective allowing the me to implement the intervention and able to

both observe and reflect revising material where necessary (Burns 1999; 2009). The hypothesis that systematic phonics instruction would be beneficial led me to looking at the following research questions:

Does phonics instruction improve phonics awareness?

Does phonics instruction improve reading?

Does phonics instruction improve spelling?

2 Chapter 2 - Literature Review

2.1 Introduction

This chapter is a review of literature on reading and phonics and related pedagogy primarily on phonics instruction. Initially the role of English as lingua franca and the prominent role English holds in UAE in education and in the business-world is discussed. Within this framework the importance of literacy in UAE in L1 and L2 is explained including various approaches to teaching and learning of reading in L1 and L2. Together with other strategies, phonics instruction is reviewed primarily together with the acquisition of reading skills. Finally, the ongoing debate of phonics instruction is summarised looking at past and current views with the view to ending ongoing disputes.

2.2 English as a Lingua Franca and its relevance in UAE

Jenkins (2015), a researcher that has written prolifically on English as Lingua Franca (ELF) over the years, claims that most English speakers are non-native speakers. Defining ELF, as it is thought of currently by Jenkins herself and two other researchers, Jenkins (2015, p.56) gives three definitions of ELF as it has evolved over the years. These scenarios are extremely relevant in United Arab Emirates (UAE), being a multilingual community (Randall & Samini, 2010). Initially, she mentions situations where English by speakers of different first language origins communicate in English (Jenkins 2009), and then she refers to two similar definitions one given by Seidlhofer (2011) a few years later, where English is the only available option of speakers of different languages and finally a definition given by Mortensen (2013) whereby English is used in "a lingua franca language scenario". These definitions indicate that how, over the years English as lingua franca, has maintained its status.

In UAE there are many nationalities and most of the community are often in situations where they can only communicate in English. This scenario corroborates with Jenkins' point of view whereby when communicating in a multilingual situation "... English is available as a contact language of choice, but is not necessarily chosen" (2015, p.73). From my experience, and I have lived in the UAE for over

sixteen years, even most of the very elderly, who have not had the opportunity of English tuition, are able to converse to some extent in English. The need to converse in English in the business world has necessitated educational institutions in this part of the world to maximise the importance of English in education. It has been made mandatory that English is the medium of instruction in the UAE (Belhiah & Elhami, 2015). Ku & Zussman (2010), when discussing the role of English in international trade, state that in many studies there is evidence that if there is a language barrier it can reduce trade, and they conclude that their results show if a level of proficiency in English is acquired language barriers can be overcome. I do feel, however, it is pertinent to mention that Jenkins posits that it is important to learn other languages as she feels that one is at a disadvantage being monolingual and therefore not able to fully participate in ELF as it evolves further into a multilingual franca, however, she reiterates that defining this is not simple by any means and will need further theorising and empirical research. Jenkins concludes that evidence shows that at this time a multilingual orientation approach to English is not very close (2015, pp.78- 79).

English as lingua franca is one of the main factors that made this research in teaching phonics to adult learners possible. UAE is a cosmopolitan society and English plays a very important role both in business and socially (Snoj, 2015). At a First Knowledge Conference (FKC) in Dubai in 2014, the former president of Zayed University in Abu Dhabi, Dr Sulaiman Al Jassim, stated that as the population in the UAE is predominantly expatriates and the society on a whole is cosmopolitan with the national population being very small, English is dominating all business and banking. He goes on to say how, at the time, and this trait continues to date, Emiratis are sending their children to private schools to learn English, however, that was not the case with the majority of students that participated in this research (Pennington, 2014). This fact is verified by the results of questionnaires conducted at the beginning of the research which are analysed in Chapter 4 in which the students are questioned about their educational background. The majority of the participants in this research did not have the opportunity of any private school tuition and the minority that did only had minimal tuition in a private school. When these students entered school English would not have been a priority. In 2012, the UAE education Minister, Sheikh Nahyan bin Mubarak, introduced a ruling at the Federal National Council (FNC), that no students would be exempt from learning English, even

students studying only Arabic or Islamic studies. He claimed that students needed to be bilingual so that they would be "… aware of what was going on around them and able to use the latest technology". He reiterated at the time how he viewed English as being important as it enabled the different societies in the UAE to communicate (Salem, 2012). Dr. Jassim's comments are substantiated by the world population review site reporting that according to the UN's estimation "the United Arab Emirates has a very diverse population, of which only 10% are UAE nationals and the remainder is made up of expatriates". Over 70% of these expatriates are made up of Asians and Western Europeans (2016).

The importance of Emiratis to contribute to business in UAE and be proficient in English has been expressed by the leaders in UAE, as mentioned above. Therefore, to enable the Emiratis to progress in the global business community which is developing in the cosmopolitan UAE, professionals need to be able to conduct their business using English as the lingua franca. In my experience as a lecturer in UAE, lecturing to mostly Emiratis, it was obvious to me that many students were not proficient in reading skills. As discussed in Chapter 1, a colleague made me aware of how his students were interested in phonics instruction and showed motivation to improve in this area. In his opinion phonics instruction was helping them improve reading skills and he was astounded at how many of them had not had any phonics instruction. I then started including phonics instruction in my classes and this inspired the research for this thesis. Also, with English increasingly being adopted as the "corporate language of most international organizations" Louhiala-Salminen & Kankaanranta (2012, p.268;), and the leaders in the country wanting their youth to develop in this area as well as in literacy discussed below, I considered phonics instruction to develop reading skills an area that could be a basis for research to achieve data for educators. The Vice Chancellor, of a tertiary institution in the UAE, Dr. Tayeb A. Kamali, claims that as educators "we are driven by the axiom that today's young readers will become tomorrow's leaders" (2009, p.5).

2.3   Literacy in the UAE

The vice-president and Prime Minister of UAE and Ruler of Dubai, His Highness Sheikh Mohammed bin Rashid Al Maktoum, publicly stressed the importance of

reading at a meeting attended by leaders of UAE, and described reading as a "key to knowledge and a bridge to reach the highest levels of innovation across various sectors". In 2015 Sheikh Mohammed initiated the Arab Reading Challenge which entailed competitors from the ages of eight to eighteen to read a minimum of fifty Arabic books within one academic year. The competitor is then tested on the understanding of the texts. This challenge is the largest Arab initiative in the world and in 2018, "more than 10.5 million pupils from more than 52 000 schools in 44 countries took part" (Duncan, 2019). This challenge was initiated to encourage reading because Arabic literacy in the UAE is extremely low (Kamhieh, 2009; Khoury & Berilgen-Düzgün, 2009; Myhill, 2014). Masudi (2019), a senior reporter of the Gulf Newspaper, reported that 13,5 million students entered the Arab reading challenge this year. The reading challenge is in the semi-finalist stage at the time of writing this thesis. As well as encouraging reading in Arabic in UAE, the tertiary institutions encourage students to read in English and the Vice Chancellor of one of the leading institutions in the UAE, Dr. Tayeb Kamali, claims that "[a]s educators, we encourage students to explore an enjoy the vast storehouse of knowledge and ideas, old and new, which is accessible only through reading" (2009, p.5).

2.3.1 Research in the Gulf Region

The following examples of research into reading were carried out in the Gulf region specific to adult Arab learners of English, and several writers have commented on how to develop the skills of reading. Anderson (2009, p.7), claims this research attests "to the fact that our conceptualisation of the reading process and the most effective way to develop reading skills is undergoing a long-overdue transformation". The research discussed below is relevant because some of the research was done in the same institute where I carried out my research and some on other campuses of the same institution making the participants in the research similar in many aspects to the participants in the research used for this thesis.

Khoury & Berilgen-Düzgün (2009), conclude as educators we should not assume that all our Arab students do not read which, Anderson (2009, p.8), claims "is the stereotypical view". Only half of the participants in their study came from homes where both parents were literate and reading in the home environment is considered an important foundation to successful literacy (Anderson, 2009; Nathanson, Pruslow,

& Levitt, 2008). Their results showed that, although minimal, the attitude towards reading of some of their participants was changing even with the minimal reading background. This change in these participants, they hope, will pass on to future generations.

Kamhieh's (2009) research was carried out on Emirati women who were proficient readers. Although the group was small (six women), these women describe the process whereby they became literate. These students highlight in their individual stories, how parents, teachers or peers have played a role in them starting reading. The importance of teachers playing a major role in promoting reading is highlighted (Kamhieh, 2009, p. 41; Feldman, 2002, p. 6).

O'Sullivan (2009, p.45), points out that the "Gulf Arab students have a significant deficit in their English reading skills". He refers to their lack of bottom-up skills in reading which need to be in place to enable students to then use the top-down strategies efficiently (Koda, 2005) (Top-down skills and bottom-up skills discussed below). He reiterates that "the ability to read confidently, efficiently and fluently in English is a key academic and professional enabler for many Gulf Arab learners" (p.45). The lack of these skills he attributes to:

- poor learning experiences from school
- attitudes carried over from post-linguistic Arab culture
- reading culture at home, in school and the wider community
- L1 reading standards
- cultural schemata
- methods of teaching
- backwash from testing
- learner motivation, interest and attitude.

O'Sullivan's (2009) concludes that apart from bottom-up skills requiring attention, to make students better readers focus should also be placed on students' vocabulary learning and acquisition (p.49).

Gobert (2009, p.55) suggests that the Arabian Gulf students should be referred to as a "non-reading culture". She writes an extensive review on literature that is relevant

to Arab learners. Her opinion is that if students do not read at home, class time should be dedicated to reading. She refers to colleagues who claim that their students preferred being read to by the teacher as they followed the text as they were unable to extract meaning from the text reading alone. Sustained silent reading (SSR) was not successful as students could not understand the text in English, "that is, they could not match the graphic forms of words to known words in their mental lexicon" (p. 56). Gobert (ibid., p.60) comes to the conclusion that, as well as the two points mentioned above, "adult Emirati students should be given explicit phonics instruction either as part of the curriculum or as an adjunct to traditional ESL reading methodology".

2.4   How is reading taught and learned in L1 and L2

2.4.1   Reading in L1

The information we gather from reading is derived from three sources: the printed words on the page, the reader's knowledge of the syntax and the sense of meaning of the sentences or passage as we read it (Bielby, 1998). The example of teaching reading to children in L1, given by Bielby (1998, p.6), is to use a balanced approach using strategies that teach a complex of skills that will "mutually support, correct and reinforce each other" and enable the reader to utilise the information from the above three sources meaningfully and with accuracy. How to teach reading, according to Bielby (1998, p.8), depends on "what the theorists think are more important – the decoding of the printed text or the meaning-making we bring to it". Should teachers concentrate on the one option, being the meaning-centred approaches where attention is not drawn to word accuracy? Bielby (1998, p.9) refers to how guessing vocabulary is a "dead end strategy" and children should rather be encouraged to be accurate as well as look for meaning. On the other hand, should teachers use only a phonics-first based approach, in other words, children establish phonic skills before being introduced to reading books? In this case, children are then not seen as having pre-existing language and literacy experiences which could help them "solve the problem of print" (Bielby, 1998, p.10). Bielby (1998, p.10) uses the analogy of a diet when defining the importance of phonics instruction. He claims that "phonics is an essential nutrient in a balanced diet … [but] we should not treat it as the whole diet". Decoding the print is of prime importance and when supported by "context of

meaning primes the reader's expectancy, facilitating both word identification and comprehension. The overall coherence of grammar and meaning confirm the reading, and the reading extends the overall meaning" (Bielby,1998, p.13). Children's reading development is dependent on a balanced teaching strategy.

Ehri (1992;1995) has a theory which proposes four phases in the development of reading skills. The phases are: pre-alphabetic, partial alphabetic, full alphabetic and consolidated alphabetic. Initially, children possess a small vocabulary of sight words that they have learned rote-fashion from a detail such as a letter in a name plaque or a well-known restaurant. This stage, known as the pre-alphabetic phase, has limitations and does not lead to better reading because it discourages children to learn other words apart from the words they may have been taught using flash cards for example, or merely remember from being told as in recognising a letter in a plaque or being familiar with a restaurant's name as mentioned above. Also, as the children's vocabulary increases the process becomes unreliable because the children can only remember a small number of words. The final limitation is that with pre-alphabetic processes they have no way of decoding unknown words (Bielby, 1998). Stuart, Stainthorp & Snowling (2008, p.62) describe errors made at this level are when children do not know there are "systematic relationships between print and the sounds of the words".

The next stage, the partial alphabetic phase, is when children start learning the alphabet and sound values of the letters, and use some phonic cues, mostly the initial and final letter sounds to enable them to recognise a word. At this stage, children have the ability to link some grapheme/phoneme correspondences as they build up a template of how a word is represented. They also develop the ability to remember new words as well as develop sight vocabulary. As children develop their phonological awareness and alphabetic knowledge, they see letters "as the visual equivalent of the heard similarities between words [which] opens up a whole new chapter of reading skills" (Bielby, 1998, p.23; Stuart et al. 2008).

The third phase is the full alphabetic phase when children develop the skill to decode new words and establish sight vocabulary. Both of these processes entail being able to match grapheme/phoneme correspondences and developing phoneme awareness. The children process the letters sequentially into sounds and blend

individual letters and digraphs. In this phase children become aware of words that do not obey the phonic rules as they learn the regular spelling patterns and come up with the correct grapheme/phoneme correspondences (Bielby, 1998; Stuart et al. 2008).

The fourth and final phase in Ehri's theory is the consolidated alphabetic phase. In this phase children develop the ability to decode unknown words using multi-letter units. As they read more so their decoding strategy improves and they become aware of the range of grapheme/phoneme correspondences they need to learn. In this phase, the more reading the children do the more sight vocabulary they acquire and therefore comprehension increases. At this point they are considered successful readers (Bielby, 1998; Stuart et al. 2008).

The key to developing children into skilled readers is to teach graphophonic/phonological skills. However, alongside this teaching it is important that children derive comprehension from their reading (Bielby, 1998; Stuart et al. 2008). As children increase their vocabulary their reading comprehension will increase (Torgersen et al. 1997; Snow, 2002; Stuart et al. 2008). To enhance the comprehension of reading material there should be ample time given to children to read. When given the time to read teachers should encourage children to select their own reading material to enhance interest in the material and give guidance so that the appropriate difficulty level enables the children to read rather than spend more time decoding unfamiliar vocabulary. Furthermore, children should be encouraged to reread texts as this results in greater fluency and comprehension. Social reading also should be encouraged so that silent reading time is not only silent, but can be shared with peers and teachers (Fielding & Pearson, 1994; Boys, 2008; National Research Council, 1998; Neuman & Dickinson, 2011; Gámez et al. 2016). Fielding & Pearson's (1994, p.64) view is that reading comprehension is not only a cognitive process, but a social process as well. In their opinion, "[c]onversation not only raises the status of independent silent reading from a time filler to an important part of the reading program; it also gives students another opportunity to practice and build comprehension skills collaboratively".

Two more approaches to establish comprehension are top-down and bottom-up processing. Top-down processing is when background information is used to predict

the meaning of the text and bottom-up processing is decoding a series of written symbols into sounds to make words to understand the text, and both are considered equally important (Nunan, 2000; Harrison & Perry, 2004).

Cambourne (1979), uses the term outside-in when referring to the bottom-up approach and illustrates the process as:

Print→every letter discriminated→phonemes and graphemes matched→blending→pronunciation→meaning.

There are two assumptions made in bottom-up process, one being that the reader knows the phoneme/grapheme correspondences and the other that once the word is decoded the reader has this word in his/her oral vocabulary (Nunan, 2000). For efficient bottom-up processing the reader needs instantaneous word-recognition skills and the ability to decode words as well as apply lexical and grammatical knowledge when reading (Pathare, 2009, p.67).

The top-down approach depends on the reader matching meaning rather than decoding form (Nunan, 2000, p. 65). Cambourne (1979), illustrates top-down process as:

Past experience, language intuitions and expectations→Selective aspects of print→Meaning→Sound, pronunciation if necessary.

For top-down process to be successful the reader needs to interact with the text and have some knowledge about the content of the text. The schema theory "suggests that the knowledge we carry around in our head is organised into inter-related patterns" (Nunan, 2000, p.68; Pathare, 2009). These patterns assist in making sense of new experiences and assist in indicating what might be expected within a context. If a reader is not able to use top-down processing, in other words, able to activate schema while reading, it will be extremely difficult for the reader to recall detail in the text (Harrison & Perry, 2004, p. 64). Looking at the schema theory from an applied linguistics perspective, Widdowson (1983), reinterpreted the theory to consist of both a systematic level and schematic level to language. He claims that readers can connect to text using both these levels. The systematic level includes

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the phonological, morphological and syntactic elements of language and the schematic level to background knowledge of the text as discussed above.

The phonological element which is how sound is represented and received in language is discussed below. Morphemes are the minimal units of meaning in a word or units of grammatical function in a word. By studying morphology learners will become more aware of the process of word-formation and therefore develop larger vocabulary which will contribute to better reading comprehension (Kieffer and Lesaux, 2008; Kieffer and Lesaux, 2012a, 2012b; Öz, 2014). Research carried out on morphological instruction concluded that this instruction benefits all students, but is particularly beneficial for weak readers and younger children (Bowers et al, 2010; Goodwin and Ahn, 2010, 2013). Morphemes in English are composed of units of meaning or grammar. For example, in the word play, the function of the morpheme play would be meaning and when morphemes such as -s, -er, -ed, or -ing are added; the function of these morphemes would be grammatical (Lieber, 2009, p.32). There is a further distinction made to morphemes in English. Morphemes are derivational or inflectional. Derivational morphemes create new words converting the original word into a different grammatical meaning. For example, when the derivational morpheme -ize is added to the adjective normal the word is converted to the verb normalize (Yule, 2010, p. 69; Öz, 2014, p.92). The grammatical function of inflectional morphemes is to indicate if a word is singular or plural or what tense the word is representing or whether it is in a comparative or possessive form. Öz (2014, pp.92-93) identifies the eight inflectional morphemes and their function below:

> The first two inflectional morphemes (-'s, -s) are added to nouns, the first marking possessive and the other indicating plural. There are two inflectional morphemes attached to adjectives/adverbs. These are -er (comparative) and -est (superlative). The rest of the inflectional morphemes are all added to verbs: -s (third person singular), -ing Linguistic for English Language Teaching 93 (present participle), -ed (past tense) and -en (past participle). It should be noted that some variation exists in the forms of the possessive and past participle morphemes. We can see that the possessive morpheme sometimes appears as -s' (these passengers' suitcases) and the past participle as -ed (The plane has just landed). In English, the above eight inflectional morphemes consist of suffixes added to the end of words.

Teaching morphological awareness significantly improves reading comprehension as students who are morphological aware and able to recognise and manipulate words understand how words are formed which would increase their lexicon and therefore contribute to understand of text (Carlisle, 1995; Graves, 2006; Keiffer & Lesaux, 2009; Kieffer & Lesaux, 2012a/2012b; Öz, 2014).

When teaching morphology awareness, attention is also brought to grammar as morphology is an "element in grammar … [and] "morphology helps the reader interpret the syntax and meaning of a text" (Bielby, 1998, p.113).   Bussis et al. (1985, p. 104-106), when referring to affixes, claim that children's knowledge of affixes and their grammatical meanings enabled them to develop their ability to "anticipate the grammatical structure of text".   In their study they claimed that the children used their synthetic phonics knowledge to recognise the spelling patterns of affixes and suffixes as well as their grammatical functions. Phonological units are not only reinforced by morphology, but also given significance. "These recognition units are not just inscribed in graphophonic processes, but they are also inscribed in semantic processes" (Beilby, p. 115).   Semantic and syntactic understandings operate closely together and therefore it is advantageous to introduce new "grammatical constructions and usages where meaning helps their syntactic understanding" (Bielby, p.152). When a child is a good reader, he/she will use three strategies: graphophonics, syntax and semantics (Bielby, p. 142).

2.4.2   Reading L2

Pathare (2009) compares L2 readers of English to accomplished English L1 readers with no medical training reading a specialist medical journal. English L1 readers in this analogy would likely encounter the same problems he identifies in L2 readers of English who lack what he identifies as four critical skills to successful reading:

- top-down strategies
- bottom-up strategies
- fluency and reading speed
- positive affective factors.

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The first three strategies have been discussed above with regard to L1 readers, however, L2 readers would find these strategies more difficult. L2 readers of English use their L1 strategies to decode words. In studies done on Arabic readers, the findings showed that due to deficiencies in bottom-up processes the readers had difficulty decoding words (Birch, 2002; Koda 2005). Gobert (2009, p.58), identifies that adult Arabic readers read in an "orthographically deep language, that is Arabic written without the diacritics that indicate the short vowels". Studies done on Arabic readers show that when reading, readers use whole word recognition (Abu Rabia, 1995; Abu Rabia & Awwad, 2004). Gobert (2009, p.60), concluded that "students use whole word recognition strategies when learning to read in English due to Arabic interference" and also due to not having explicit English phonics instruction. Also, they have not been able to develop the "grapheme/phoneme connections that English speakers have by being read to aloud to by a caring parent". As mentioned above when discussing literature in UAE, reading is not a habit done in most homes and most students in the Gulf do not read (Kandil, 2001; Shannon, 2003). Bottom-up skills are important to be a successful reader, but to be a good L2 reader one needs to be skilled in both bottom-up and top-down strategies (Eskey, 1988; Eskey & Grabe, 1988; Grabe & Stoller, 2002, McDonough, 2002, Koda, 2005). Home literacy that would introduce some phonological sensitivity as well as develop an interest in books and reading which would in turn increase background knowledge would improve the L2 reader's ability to decode words and increase comprehension (Shih, 1992; Singhal, 1998; Aebersold & Field, 1997; NRP, 2000; Perfetti & Sandak, 2001, p. 8979; Landi, 2010; Van Staden, 2016).

Slow reading, according to Pathare, (2009, pp. 67-68), stops readers from understanding and appreciating text. Reading fast enables the reader to read fast when required to do so and slowly if that is what the reader wants to do. Readers who can only read slowly do not have that privilege (Kandil, 2002). Three reasons why readers are slow are "sub-vocalization, regression and limited eye span" Kandil, 2002, p. 214). Sub-vocalization is when the readers pronounce or say the words in their minds which impedes the speed of reading; regression is when a reader has to go back either to "words, phrases, lines, or even paragraphs" to comprehend what has been read and finally, limited eye span which is due to the way people are taught to read when they first started reading by reading word by word and not developing

the skill to read text when it is "chunked into meaningful thought units rather than plodded through word by word" (Grabe, 1991; Nuttall, 1996; Kandil, 2009, p.216). There are several reasons, as well as the ones previously mentioned, that are responsible for slow reading specifically applicable to Arab students. These reasons are findings given by Kandil (2009), who is a teacher of English in UAE at the time of him writing, and was also a student in the Arab world. An Arab student will find it difficult to read material for the general idea. This Kandil, feels is due to the curriculum designers and teachers in the Arab world because when reading students were expected to know all the details to answer "all kinds of tricky questions" (2009, p.218). To be asked twenty or thirty questions about a chapter was not unusual. Therefore, this perception has been carried over when studying English as they expect to be trapped with difficult comprehension questions on the reading materials.

Another factor that impairs reading speeds of Arab students is that because "text represents truth", they form the habit of memorising facts. This habit contributes to slow reading of Arab students (Kandil, 2009, pp.281-219). The other obstacle that Kandil (2009) mentions has been discussed previously; a large number of Arab students are not in the habit of reading. His perception for this is that "[r]eading is very seldom taught and very frequently assessed" (p.219). Reading is then perceived by Arab learners as "assessment, grades, points, wrong, punishment, [and] reports" (p.219). Little is done to encourage reading for pleasure, in Kandil's experience, and unless students read in quantity, they will not develop the skills to become fluent readers (Day & Bamford, 1997, p.1; Kandil, 2009). L2 readers use their L1 strategies to recognise words and comprehend L2 readings, however, these strategies limit reading comprehension (Haenggi & Perfetti, 1992; 1994; Upton, 1997).

The final factor that Kandil presents as an obstacle to Arab's rapid reading is the duality of the Arabic - Arabic diglossia (Kandil, 2001, Saiegh-Haddad, 2004; Gobert, 2009). Arab learners have to deal with two languages in L1; the one they use for reading and writing which is referred to as "classical Arabic or Fusha" that is used on formal occasions and the other that is used for daily communications. These two forms of Arabic are very different and could be considered two separate languages (Palmer, 2007; Kandil, 2009). Taking this into consideration, unless an Arabic

learner reads extensively in Arabic, what should be considered their L1, Arabic learners read very slowly. Caroll et al. (2017), carried out research on Arabic literacy in UAE and concluded that Arab learners' literacy would improve if the literature was written not in formal Arabic which is commonly known as MSA, but in colloquial Arabic (CA). "MSA is the modern form of Classical Arabic and is the language currently used in written and formal exchanges between Arabic speakers" (Carroll et al. 2017, p. 318). "MSA is also the language used in children's literature and textbooks used in primary and secondary education" throughout the Middle East (Carroll et al. 2017, p. 318). The text would be more meaningful if Arabic readers read in their L1, at a level that they understood and literacy would improve (Kandil, 2009; Myhill, 2014; Caroll et al. 2017). However, throughout the Middle East, CA does not hold as much status when compared to the formal Arabic (Ibrahim, 1986; Palmer, 2007; Myhill, 2014, Saiegh-Haddad & Spolsky, 2014; Caroll et al. 2017), and most educational material is written in formal Arabic (Kandil, 2009). In these circumstances an extensive reading programme in L1 would introduce Arabic learners to what Rooney, (2009, p. 197), describes as "reading as it is done in real life by allowing [Arabic learners] to choose what they read, when they read and even for what purpose they read". Rooney, (2009 pp.199-201), introduced an extensive reading programme to some students in UAE, and contributes various benefits to introducing an extensive reading programme. An extensive reading programme will enable the students to read in quantity exposing them to more language (Elley, 1991; Bell, 1998). By reading material the learners find interesting, vocabulary and language acquisition will increase (Krashen, 1982; Nagy & Herman, 1987). Readers will gain confidence which will in turn increase the skill to read longer texts and retain information as they strengthen previously learned skills and language (Wodinsky & Nation, 1988; Kembo, 1993). As the students' reading speed increases so will the comprehension of the text improve enabling the reader to identify redundant language in the text (Kalb, 1986). Finally, extensive reading will "provide students to use their pre-existing schema to help them interpret the message beyond the print". There are certificates that are required for foreign students to gain acceptance to western universities such as TOEFL and IELTS and an extensive reading programme develops the skills required to read at a level to achieve the required score (Rooney, 2009, p.201).

The fourth factor Pathare (2009), refers to is the positive affective factor as being where the L2 reader of English might not have the motivation to read or realise the benefit of reading (p.68). In L2 literacy, the foundation for literacy is often lacking at home, as mentioned previously, and often families do not have the skills to adequately support their children's literacy development. Interaction with parents provides the foundation for children to develop literacy skills as does the parents' level of education (Lenyai & De Wit, 2008; Wasik & Van Horn, 2012). Kutner et al. (2003) look at the results shown in the 2003 National Assessment of Adult Literacy, and ascertain that parents that were more proficient in literacy read to their children more than parents with lower levels of literacy. Children who have parents who cannot support their language or literacy development thereafter have problems coping with literacy throughout their education and future employability (Stanovich, 1986; Chall, 2000; Lipka & Siegel, 2010; Wasik & Van Horn, 2012). With L2 readers who have not had the opportunity to develop reading skills as children at home or in education it is essential to dedicate time to reading in class (Gobert, 2009, p.55), because only by reading in quantity will students become fluent readers (Day & Bumford, 1998; Shannon, 2003; Gobert, 2009; Johnson, 2009; McLaren, 2009, Ross & Nelson, 2009). Reading aloud by students and teachers in the class environment, has been recognised as involving cognitive processes in the development of literacy and a method that increases the development of phoneme/grapheme correspondences which is critical in both word recognition and learning new vocabulary in English (Stanovich, 1991; Underhill, 1994; Bielby, 1998; Cameron, 2001; Alfalasi, 2008; Gibson, 2008; Lonigan et al. 2008; Gobert, 2009; What Works Clearing House, 2013; Gámez et al. 2016).

2.5 Phonics

In the research used for the purpose of writing this thesis I used an approach of focussing on the association of phonemes to graphemes, constantly working with the students on the relationship of sounds to letters. Motivating me to follow this route are the many researchers who have referred to using phonics when teaching reading and many have indicated the importance of the association between graphemes and phonemes with word recognition.

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Burton et al. (2008, p. 8) refer to phonics as "an approach to teaching reading and spelling which focuses on the association of phonemes (sounds) with particular graphemes". In the research for this thesis the phonics instruction class concentrated on the relationship between letters and sounds

Kruidenier (2002, p.1) was part of a panel of experts who participated in research carried out in the United States by the Reading Research Working Group (RRWG), a group formed by the National Institute for Literacy (NIFL) in collaboration with the National Centre for the Study of Adult Learning and Literacy (NCSALL), to identify and evaluate research related to adult literacy. The research was related to reading instruction to adults with some similar characteristics to the participants in the research carried out for this thesis such as a low literacy rate, a similar age, in Adult Secondary Education programs (ASE) and English for Speakers of Other Languages programs (ESOL).

When evaluating the research Kruidenier (Ibid. p.2) stipulates that readers, amongst other things, need knowledge about how the English alphabet represent spoken words (alphabetics). He goes on to say that readers also need knowledge of how sounds make up words (phonemic awareness) and how the individual letters and letter combinations are made to represent these sounds (phoneme/grapheme correspondences).

Kruidenier (ibid. p.35), defines English as an alphabetic language. He states:

> The letters in its alphabet are used to represent the sounds of spoken English. One aspect of reading is the ability to associate a written word or string of letters with the spoken word that it represents and, consequently, with the concepts or meanings associated with this word. The whole process of using the letters in a written alphabet to represent meaningful, spoken words is called alphabetics. Alphabetics includes both phonemic awareness, or knowledge of the sounds of spoken language, and word analysis, or knowledge of the connection between written letters and sounds (letter-sound correspondence).

It is necessary in an alphabetic writing system to gain the knowledge that the "visual symbols of the writing system (graphemes) represent the sounds of the language (phonemes)" (Castles et al. (2018, p.11). The other writing systems are syllabic

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where symbols represent whole syllables such as in Japanese and morphophonetic in which symbols represent elements of both meaning and sound as in Chinese (Castles et al. 2018). In alphabetic writing systems once a reader can match grapheme to phoneme correspondences, he/she should be able to attach meaning to text. Developing skills in letter knowledge and phonemic awareness, children will be able to develop decoding skills (Ehri, 2017, Castles et al. 2018). McDowell and Lorch (2008, p. 495) define phonological awareness as "... explicit awareness of and access to the sound structure of oral language". Research carried out by Al-Tamimi and Rabab'Ah (2007, p. 15) in a Jordanian state school concluded that phonological awareness is essential to the development of word recognition and that "explicit phonological awareness instruction is of paramount importance to this development". Although Al Tamimi and Rabab'Ah's research was carried out with children in first grade, research carried out by Fender (2003) with adult Arabic and Japanese learners of English as an L2 found that especially the Arabic learners have difficulty with word recognition. Gobert (2009), a lecturer in one of the largest tertiary institutions in UAE, shares a similar opinion and she points out that it is vital for learners to make connections between graphemes and phonemes which is something Arabic learners find problematic as she has discovered in her experience as a teacher of adult students and a researcher in UAE. She refers to the benefits of having a proficient reader read to learners whilst they follow and vice versa, as was done in a buddy reading project carried out in the UAE by Alfalasi in 2008, so that the learners can see and hear the connection between the graphemes and phonemes, as previously discussed.

On one occasion in the classroom, I had a student who had used the word figure orally many times in his business environment, but he failed to recognise the written form. He was surprised when I told him what the word was. There are many similar anecdotal experiences that have occurred during my teaching years in the UAE that confirm the above phenomenon with Arabic learners of English. This could be due to the difficulty Arabic learners of English have when decoding words.

Gobert (ibid., p. 57) refers to a few studies that have been carried out showing that Arabic learners use L1 processing devices when decoding such as "... whole word recognition strategies and [that they] have difficulties in pre-lexical ESL word

recognition". Al-Tamimi & Rabab'ah (2007, p. 6) make a comparison between English, where encoding is done through grapheme-phoneme rules with many inconsistencies in vowel representation and a "variety of context-sensitive grapheme-phoneme irregularities", and Arabic, that "uses an alphabetic system that encodes language at the level of phonemes, hence graphemes ... closely correspond to consonant and vowel phonemes". Smith, in Swan & Smith (2001), points out that Arabic speakers will overlook and confuse English short vowel sounds and put emphasis on consonants as the three short vowel sounds in Arabic have very little significance and are not written in Arabic script. In Arabic consonants, long vowels and diphthongs give meaning. Smith goes on to explain that there are no similarities between the Arabic and English writing systems, and that Arabic has a simple spelling system and is almost phonetic. This causes difficulty with Arabic speakers when they try and use this simple system with the complexities of English phoneme and grapheme correspondences. Thus Gobert (2009, p. 57) refers to empirical evidence indicating that comprehension difficulties in reading were due to "deficient letter and word identification" and that Arabic learners were relying on "... visual processing rather than grapheme/phoneme processing".

Research carried out with Arabic adult students by Abu Rabia (1995) and Abu Rabia & Awwad (2004) also concluded that adult readers use whole word recognition strategies when reading Arabic. This was apparent in the tests carried out with some of the participants in this research and this is discussed in Chapter 5. Most adult Arabic readers read Arabic that is written without the diacritics indicating short vowels therefore not needing to use any "... phonological information for exact lexical retrieval as is the case in English" and research indicates that "native Arabic speakers do not use [a grapheme- phoneme] strategy to access the lexical retrieval of Arabic words" (Gobert, 2009, pp. 58-59). Gobert (ibid., pp. 59-60) refers to research, where Emirati learners that had been receiving ESL instruction for six years, scored zero on a phonological awareness test and she also, similar to researchers mentioned above, concludes that Arabic students use whole word reading strategies "... because they have not been explicitly taught English phonics and they have not been able to develop grapheme/phoneme connections". As stated previously, there is evidence of this lack of phonics instruction in the responses given

by the students to the questionnaires given at the beginning of the semesters (The questionnaire results are reported in Chapter 4 and discussed in Chapter 5).

Gobert (2009) recommends that L1 Arabic adult Emirati students should receive "explicit phonics instruction" either as part of the curriculum or as supplementary instruction. In agreement with this approach, Al-Tamimi & Rabab'ah (2007, p. 15) conclude from their research that phonological awareness "... is relevant to the development of word-reading ability" and "explicit phonological awareness instruction is of paramount importance".

2.6   Phonics Instruction

There are several types of phonics approaches and Kruidenier (2002), explains them clearly as:

> Synthetic phonics programs teach children to convert letters into sounds or phonemes and then blend the sounds to form recognizable words
>
> Analytic phonics avoids having children pronounce sounds in isolation to figure out words. Rather children are taught to analyze letter-sound relations once the word is identified.
>
> Phonics-through-spelling programs teach children to transform sounds into letters to write words.
>
> Phonics in context approaches teach children to use sound-letter correspondences along with context cues to identify unfamiliar words they encounter in text.
>
> Analogy phonics programs teach children to use parts of written words they already know to identify new words.
>
> Mixed programs: The distinctions between systematic phonics approaches are not absolute, however, and some phonics programs combine two or more of these types of instruction. (2002, p. 36)

The type of approach used in this research was systematic synthetic phonics. Kruidenier (2002, p. 36) defines the synthetic phonics approach further as the "explicit teaching of a comprehensive set of grapheme-phoneme correspondences".

There have been several studies done on synthetic phonics instruction and Brooks (2007) reports an increase in phonologically based schemes probably being influenced by the Rose Report which was an independent review of the teaching of reading in primary schools carried out by Sir Jim Rose in England.

The Rose Review was commissioned by the British government in United Kingdom in 2005, after the House of Commons Education and Skills Select Committee published a report on the teaching of reading in schools. Rose was to report on five aspects:

- What best practice should be expected in the teaching of early reading and synthetic phonics
- How this relates to the development of the birth to five framework and the development and renewal of the National Literacy Strategy Framework for teaching
- What range of provision best supports children with difficulties and enables them to catch up with their peers and the relationship of such targeted intervention programmes with synthetic phonics teaching
- How leadership and management in schools can support the teaching of reading, as well as practitioners' subject knowledge and skills
- The value for money or cost effectiveness of the range of approaches the review considers (Rose, 2006, p.2).

With regard to the first aspect, the Rose Report concluded that a systematic phonics approach should be used in schools in England (Rose 2006). Rose cites Ehri's comments when she was summarising the findings of the reading panel in the United States on systematic phonics as "... [showing] that systematic phonics instruction produced superior performance in reading compared to all types of unsystematic or no phonics instruction" (ibid. p.17). Burton et al. (2008) refer to the advantage of being systematic in phonics instruction in their writing several times. McShane (2005) stipulates the necessity for learners with very weak phonemic awareness to have a systematic approach to phonics instruction.

The Rose Report (2006) narrowed the choice of phonics instruction down further stating that the systematic phonics approach selected by schools should be synthetic phonics. The advantages of systematic synthetic phonics being the 'first and fast'

approach where children at the age of five or under in some cases can be taught letter sounds before they are introduced to books. They are then taught how to blend these sounds to build words. These can be taught in the space of a few months defending the 'first and fast' approach. The report stated:

Having considered a wide range of evidence, the review has concluded that the case for systematic phonic work is overwhelming and much strengthened by a synthetic approach (p. 20).

Johnston & Watson (2005, p. 70) reinforce the support for systematic synthetic phonics when they report on a study carried out on five-year olds in Scotland and they recommend that there is more research needed to establish the gains of using methods other than the synthetic systematic phonics approach to teaching reading. Children being taught using the synthetic phonics approach were ahead in the first year of school and remained ahead in the third year of school compared to children in the analytic-phonic approach. Johnson & Watson (2007, p. 10) again defend the synthetic phonics approach after carrying out a seven-year study also in Scotland. They followed the progress of three hundred children from Primary 1 to Primary 7 reporting on the effectiveness of a synthetic phonics programme when teaching reading and spelling.

However, the recommendation of using systematic synthetic phonics has proven to be controversial as can be seen on further research discussed below. Wyse and Styles (2007) and Wyse & Goswami (2008, p. 701) give a comprehensive argument in their articles, referring to a myriad of research on phonics instruction, and conclude that "[t]here is no empirical research base to justify the Rose Report's recommendation that the teaching of reading in England must rely on synthetic phonics". Wyse & Goswami (2008, p. 706) believe that there is evidence that systematic phonics instruction can be effective, but they point out more research is needed in this area. Torgerson et al. (2006) conclude that there is no evidence identifying one method of systematic phonics instruction being more effective than the other, a comment which is also referred to in Wyse & Styles' and Wyse & Goswami's arguments above. Torgerson et al. (2006, p. 50) recommend, in agreement with Wyse & Goswami, that more research is needed in this area. This matter of more research being needed and that synthetic phonics is the most

effective approach to use when teaching reading is still being discussed by researchers such as Clark (2017) who challenges the evidence presented by government ministers in England, that led them to claim that synthetic phonics is the most effective approach to use when teaching children to read.

Further research was commissioned by Department of Education and undertaken by the National Foundation for Educational Research (NFER), from 2012 to 2014, on a phonics screening check to provide an overview of teaching phonics practices and to draw attention to any changes. Walker et al. (2014) state in their report on the findings that not all schools were using only the synthetics phonics approach. The findings revealed that many of the schools believed that phonics instruction should be used when teaching reading, but that other methods of teaching reading should be included (p. 72).

Davis (2012, p.560), has similar views when it comes to including other methods when teaching reading when he argues strongly against synthetic phonics being one of the component skills of reading and that it "... should [not] be taught explicitly and independently of reading for meaning". Davis (2012) does, however, specify, that he is not "attacking phonics", but more the "... imposition of text decoding outside 'real' meaning". Also defending the theory of reading for meaning, Barrs & Spencer (2008) discuss a book they both hold in high regard, *Inquiry into Meaning: An Investigation of Learning to Read*, originally published in 1985 (Bussis et al. 1985). They refer to the research carried out on how children learn to read when the book was published and the relevance of that research currently on how when reading "... knowledge is based on several kinds of knowledge" (Barrs & Spencer, 2008, p.151). Their comments conclude that meaning should be put at the "heart" of learning to read (p. 164).

Davis (2012), still with meaning in mind, discusses the way some words in English are pronounced differently according to dialect in United Kingdom itself and other complexities of phoneme and grapheme relationships and that English is phonetically irregular which are some of the factors I considered when choosing the Ruth Miskin Read Write Inc. programme. The programme is discussed briefly below and in more depth in Chapter 3, but all the points mentioned above were considered when looking at the programme I would use for phonics instruction in this research. The Consonant

Chart and Vowel Chart adapted from the Spelling component of the programme, (See Appendix 5 labelled Consonant Chart and Appendix 6 labelled Vowel Chart), clearly list phoneme and grapheme relationships that I considered might be helpful allowing the students to independently use the spelling charts to decode words and possibly assist in reading comprehension. Davis goes on to defend phonics-based decoding stating that it can play a critical role "... towards reading maturity" (ibid. p.562). The participants in this research are expected to work towards reading maturity as a goal towards reaching their required level to continue studying at the institute.

Brooks et al. (2007, p.57), who have had extensive experience investigating adult learners progress particularly in reading and have written abundantly on phonics instruction and reading, comment that when teaching reading in adult literacy classes, phonics instruction "... tends to be spur-of-the-moment – incidental rather than systematic – and is often inaccurate and misleading". This was also highlighted as being the case in earlier research with Brooks and other colleagues (Besser et al. 2004). Brooks & Burton (2010) express that it is extremely unusual for an entire lesson to be based on phonics instruction in adult literacy classes. From personal experience, when teaching adult students in the same institution where the research for this thesis was carried out, I can confirm that incidental phonics instruction was exactly how phonics instruction was given to students. These incidental moments in my lessons, where students were intrigued in the phoneme/grapheme correspondences, were partly responsible for the rationale to carry out the research for this thesis as is discussed in Chapter 1.

I was further encouraged to carry out this research by comments from some researchers such as, McShane (2005, p.13) who maintains that "[a]dults with weak decoding skills need explicit and systematic phonics instruction" (Ehri et al. 2001). She goes further to say, that according to research, no one systematic approach has been proven more effective than the others, which is in agreement with researchers mentioned above. The belief that no systematic approach has been proven more effective than others is mentioned by several researchers who have considerable experience in teaching adult learners (Besser et al. 2004; Burton et al. 2007; Burton et al. 2008; Brooks & Burton 2010). McShane (2005) comments on how, at the time

of publication, more researchers were creating a foundation for adult literacy teachers to base their instruction and activities on, however, she advises that most of the research is based on the experience of children's classrooms. Apart from the researchers mentioned above I was not able to find other researchers that had carried out research on phonics instruction with adult learners. This compounded on the lack of phonics instruction in adult literacy programmes.

At the time of my research for this thesis (2011 to 2012), I found it impossible to find any examples of phonics instruction in adult literacy programmes. Burton et al. (2008, p.27) comment that "... there is a complete absence of phonics materials aimed at adults and certainly no resources for adults using a progression that follows Letters and Sounds". Brooks & Burton (2010, p. 9) state, "[t]o date, there are no phonics schemes designed specifically for adults; several school-level schemes have been adapted, to a greater or lesser extent, for use in adult literacy classes. Brooks & Burton (2010, p. 5) were approached by the Baytree Centre in Brixton to conduct an evaluation of the literacy courses for immigrant women, known as "The Spalding Method". Unfortunately, I had no knowledge of this method at the time of conducting my research. The Spalding Method is originally designed for dyslexic children, but has also been used for children with no disability and adults. However, teachers using the Spalding Method need to go on a training course, therefore this would not have been a suitable option in the circumstances had I known about it at the time.

Although there has been some reluctance shown in United Kingdom in using phonics with adults, there have been some instances where phonics schemes have been adapted to suit adults (Burton, et al. 2008). The researchers Burton et al. refer to were very encouraged by the results of their research (Burton, et al, 2008, p. 9).

Moreover, they maintain that even if students have been instructed ineffectively in their schooling, this should not deter teachers from giving phonics instruction to them as adults. The majority of teachers in the research that Burton et al. (2008), discuss felt that phonics instruction was suitable for learners of all ages, especially learners that have not had the chance of receiving it in their education. With the myriad of positive reflections on phonics instruction and adapting children's phonics programmes to suit adults I felt confident to carry out this research by adapting a programme that I had some familiarity with.

I chose to adapt material from the Read Write Inc. Get Spelling series developed by Ruth Miskin because of my familiarity with her work and because of her years of experience working with phonics research. Ruth Miskin has worked with phonics as well as being an adviser to the Government in the United Kingdom with regard to literacy for many years. She developed a synthetic phonics-based reading, writing and spelling programme, for children that starts with the forty-four phonemes of English and the predominant graphemes for them which I felt would be a system the participants could work with. Brooks (2007, p.69) describes her programme as "structured, intensive and systematic". He mentions Ruth Miskin as maintaining "... difficulty in reading graphemes means difficulty in reading words, which will mean an inability to read text". The programme and how I adapted it is discussed further in Chapter 3. Another point that made Miskin's approach the one I wanted to use was the connection Miskin made with phonics and reading and spelling and that was an area I was investigating in the research I was carrying out for this thesis.

2.7   Reading and phonics

The Reading Research Working Group (RRWG) was established by the National Institute for Literacy (NIFL) which was a federal organisation working towards a fully literate United States of America in collaboration with the National Centre for the Study of Adult Learning and Literacy (NCSALL), which was a federal funded research and development centre that was focussed on adult learning, and was made up of a panel of experts on adult reading research and practice. The purpose of this group was to "... identify and evaluate existing research related to adult literacy reading instruction in order to provide the field with research-based products including principles and practices for practitioners" (Kruidenier, 2002, p.1).

Kruidenier (ibid.) presented the findings from the analysis of adult basic education (ABE) related to low-literate adults aged sixteen and older including adults in Adult Secondary Education (ASE) and English for speakers of other languages (ESOL), all similar characteristics to the participants in the research carried out for this thesis. Kruidenier (Ibid.) points out that even if a reader is able to understand the concept of what he/she is reading, it is not possible if the reader cannot read the individual words. Kruidenier (ibid.) mentions alphabetics, phonemic awareness, phonics and

word analysis as being crucial to being able to read effectively. He posits motivation being especially important for effective reading which is also mentioned as crucial by other researchers (McShane 2005) (Burton et al. 2010). How the participants' motivation might have affected the findings in this research is discussed in Chapter 5. Afflerbach (2004) conducted research on adolescent reading and mentioned motivation as leading to increased engagement and then in return engagement in return leading to increased motivation. Kruidener (2002, p.3) states that it might not be possible to use the same approaches used to teaching reading instruction for children because adults are likely to have different strengths and weaknesses. Burton et al. (2010), believe that their project carried out on adults ranging from twenty years to eighty years demonstrated how child school based strategies, suitably adapted for adults, can be successful. In research carried out by Burton et al. in 2008, children's material was adapted and only two students felt it was childish, the rest of the students found it enjoyable. It was necessary to change some of the material in my research as participants found it childish similar to the aforementioned research, however, once changes were made there were no more references to the material being thought of as childish. As mentioned previously, most of the participants in the research carried out for this thesis had not had any phonics instruction and those that had received some confirmed that it was minimal. By not having this basic instruction there are certain areas lacking, such as the working memory or phonological loop that researchers believe can inhibit learning.

2.7.1   Verbal working memory – the phonological loop

Walter (2008) carried out research on a component of the verbal working memory (VWM), the phonological loop. She defines the phonological loop as being "[o]ne of the slave systems" of the working memory (WM) "that stores information in phonological form and automatically rehearses that information by unconscious sub-vocalisation". Therefore, the participants in this research as adult Emirati Arabic learners of English as a second language (SL) are not likely to have a phonological loop to utilise. Empirical research indicates listeners record two seconds of speech automatically when they hear it and store it in the phonological loop and that primarily the phonological loop may assist in language acquisition (p. 457). Baddeley et al. (1998), cited by Walter (2008, p. 458) concluded that "the long-term learning of the

sound structures of novel, phonologically unfamiliar words depends on the availability of adequate representations of the sound patterns in the phonological loop". Walter (ibid., p. 458) posits that L1 readers of alphabetic languages do not mentally see what they read, but that they "hear it". This would strengthen Gobert's (2009) and other commentators' suggestion, mentioned above, that reading aloud assists students with grapheme and phoneme identification and the importance of this activity.

Evidence has shown that words are stored phonologically, not visually, and that low L2 WM is connected to reading comprehension problems. Walter's research (2008) determined that there is a need for L2 learners to develop "a reliable phonological repertoire" to become skilful readers (p. 469). According to Walter's research carried out on French learners of English, and English Learners of French, "... the immediate products of decoding [are stored] in the phonological loop" (p. 461). She concludes that there is a possibility to improve L2 comprehension if teachers spend time explicitly teaching L2 phonemes, as having the ability to distinguish phonemes as a manageable target for learners.

To have the ability to decode written L2 text, learners have to reach a level of a reliable repertoire of L2 phonemes in their long-term memory which will enable them to use words in their phonological loop for comprehension. This repertoire will improve once the learners' knowledge of phonemes improves because all exposure to language will reinforce this repertoire and increase their working memory. As this research will be carried out in a monolingual situation it should be easier for me to identify areas where the learners are having specific problems and work in these areas to improve and increase their repertoire of phonemes and grapheme correspondences (pp. 470-471). It is likely though, because of the limited time frame I have with the students, this is will not be possible, however, it could be an area for further research. Burton et al. (2008) point out that it is very difficult for learners, not only ESOL learners, to differentiate between phonemes. There is belief amongst researchers that phonological awareness cannot be acquired without some form of phonics instruction.

2.8   Phoneme awareness

In research carried out by Al-Tamimi & Rabab'ah (2007), they found no evidence that phonological awareness can be naturally acquired and they suggest that it can only be taught. It seems that in over a decade, some researchers' opinions have not altered in this aspect as Benton (1992) and many researchers she mentions were of the same opinion that phonological awareness is not naturally developed. Arab ESL learners have significantly more problems with spelling and reading comprehension than other ESL students, especially when it involves patterns above the basic grapheme-phoneme level. Research carried out by Fender (2008) indicated that when compared to another group of the same level, intermediate level Arab learners scored significantly lower on both the spelling and comprehension tests. Fender (ibid.) refers to previous research on Arabic students indicating that they focus on consonants when identifying the root of words and not on the vowels and that they use the context to identify English words which is similar to Arabic word recognition skills, a trend that is used by L2 readers as mentioned above. There are many variables that inhibit the research carried out by Fender, such as lack of language proficiency measures, possibility of more exposure to English for one of the groups and the fact that the Arabic group had a smaller sample size, nonetheless, the research still indicated that the Arabic learners lack the ability to utilise spelling-sound relationships which potentially has an impact on their word recognition skills. Al-Tamimi & Rabab'ah (2007, p. 9) conclude, based on empirical research, that there are significant effects on both reading and spelling skills and that explicit phonological awareness instruction is beneficial. Hulme et al. (2012) came to the same conclusion in a large-scale intervention study carried out in 2012 and posit that phoneme awareness produced significant improvements in reading at word level and spelling skills. In research carried out by Melby-Lerväg (2012, p. 363) findings identified phoneme awareness as the "... strongest unique predictor" of reading skills. Burton et al. (2008, p.16) point out that it is difficult for learners to differentiate between phonemes as mentioned above, and that a great deal of assistance is required to help them understand and that it is essential they become aware of phonemes.

2.8.1   Reading and phonemic awareness

From a pedagogical point of view, the findings of Walter's (2008) research show that, unless teachers have reliable proof that the learners have poor comprehension skills in their L1, reading is "not a good use of classroom time". Learners need, rather, to improve their mental representation of spoken language. Learners that do not live in an environment where the L2 is the target language may need more exposure to enable them to analyse phonologically and increase their phonological awareness (p. 470).   Reading aloud, as mentioned previously, especially by teachers, enables learners not only to recognise words, but it provides the opportunity of the learners to use both visual and aural processes to recognise words thereby increasing phoneme awareness. Teachers need to determine their learners' needs when learning to read in a different script to their L1, such as Arabic learners, and adjust their techniques to accommodate these needs (Randall, 2009). From observing poor reading skills in Arabic learners, as a teacher/researcher in a tertiary institution in UAE, O'Sullivan (2009, p. 49) highlights one issue as being the learners' lack of ability in letter and word recognition. He concludes that there is "... a need for teachers to refocus energy and resources on developing approaches, materials and strategies".

One of the elements that Pathare (2009, p. 71), also a teacher/researcher in the same tertiary institution in the UAE, points out as being essential for reading programmes is having "... the ability to decode the spelling system of English, and to understand the relationship between letters and sounds". He refers to the greatness in the differences between the orthographies of Arabic and English and the challenges the learners have in decoding and encoding English and concurs, amongst other elements, that programmes that put emphasis on spelling-sound decoding skills will result in better reading skills (p. 72). He acknowledges that this will require patience from teachers, learners and teaching institutions, but suggests that with this approach it will be "exciting and enriching for teachers and learners" alike (p. 76). McShane (2005, p.1) carried out research on adult literacy classes and describes her book as a first resource for instructors in reading that have little knowledge or those who want to improve their ability to teach reading and she also claims that her book can be for use as guidance in basic education programs. She defines reading as "... a complex system of deriving meaning from print that requires

all of the following skills". She gives six skills that include having background information and vocabulary, strategies to get meaning from print, a motivation to read, and being able to read fluently with "skills and knowledge to understand how phonemes, or speech sounds, are connected to print [and] the ability to decode unfamiliar words" (p.3). Moreover, McShane (ibid.) points out that research has identified the components of reading, the first two being phonemic awareness and decoding and she gives the two parallels of reading instruction as phonemic awareness training and phonics instruction (p.13). Furthermore, she maintains that phonemic awareness is necessary to have accurate decoding skills and that to recognise words one needs to be able to decode using letter-sound relationships. Kruidenier (2008, p.20) points out that adult non-readers have virtually no phonemic awareness and have difficulty in performing phonemic tasks such as applying phoneme to grapheme correspondences. McShane (2005, p.13) claims that as many adult readers may not have phonemic awareness this may "need to be taught directly". She discussed how it is not easy for poor readers to acquire phonemic awareness and refers to an adult learner's quote that reiterates the difficulty some learners have: "It's not that no one ever taught me how to read before, it's just that they never took me back far enough. They didn't know what I didn't know" (p.33). McShane (ibid. p.35) defines phonemic awareness as "the most refined (or most difficult) level of phonological awareness". She posits that some individuals may never acquire complete phonemic awareness. The fact that I had to take my participants back to the basics of phonics was equivalent to my personal experience of teaching students at the same institution prior to commencing my research and part of the rationale for carrying out this research. The results of the initial questionnaires indicated that this was necessary as the majority of the participants responded that they had had no phonics instruction.

To develop decoding skills, it is necessary to be phonemically aware. McShane (2005, p.40) defines decoding as "... a word identification skill that involves using letter-sound correspondences to recognize words in print". She refers to the written word being "sort of code" which is the one way I managed to get the students to look at decoding as something not only children would do (p.40). It was an interesting stage at the beginning of conducting the research, because as soon as I explained that I would be teaching the code rather than the sounds to letters approach, the

participants' outlook towards the class changed as they felt that was not so childish. Thereafter, when they were sounding out a word, they also did not look at it as being childish.

Researchers point out that it is not only necessary to be phonetically aware to "sound out" a word by knowing the letter sound correspondences, it is also necessary to acquire the skill of blending the individual sounds so that they can be heard in order and then finally recognise the word (McShane 2005, p. 35). Shapiro et al. (2008) look at delivering phonological and phonics training within whole-class teaching and find that there is strong evidence the grapheme and phoneme correspondences are useful when learning to read. McShane (2005) refers to how phonemic awareness enables readers to not only identify the words, but also to spell them which is one of the reasons spelling is also a component of this research and why it was included in this research; to ascertain if there was some significant improvement in the group receiving phonics instruction.

Burton et al. (2010) conclude, after carrying out research on adult learners of mixed abilities and an age range of twenty to eighty, that phonics instruction is beneficial and should be used in adult literacy classes. McShane (2005, p.40), when discussing who needs phonics instruction, has the same outlook stating that "[a]dult non-readers and beginning readers almost certainly need to learn to recognize and use the letter sounds and common spelling patterns in our language". Initially, she says, they will use decoding to recognise and decode words they already know and move on to words they do not know. She points out a trend I noticed in the students used for the research used in this thesis; that new readers often come across words that are in their speaking vocabulary, and they recognise them once they decode them. I have mentioned the one experience I had with a student and the word figure and another was with the word enough.

McShane (ibid.) verifies the importance of phonics instruction for beginners and that it is also beneficial for some intermediate readers whose decoding skills do not come automatically. Kilpatrick (2012) refers to research demonstrating that if phonological awareness difficulties are not addressed, they can be a cause of reading difficulty from childhood and continue to and throughout adulthood.

McShane (2005) comments on how, at the time of publication, more researchers were creating a foundation for adult literacy teachers to base their instruction and activities on although based on children's activities as discussed previously. In 2007 Brooks et al. carried out a large study on strategies in adult literacy in Britain and they mention accurate phonics teaching as being an approach rarely seen. They move on to say that accurate phonics teaching is one of the approaches that should be prioritised for further development and they include the rarity of accurate phonics teaching being responsible amongst other approaches for limitations in progress. They refer to previous research and identify phonics teaching in adult literacy classes as an area where a detailed development and research project should be carried out with teacher training a necessity so as to assess the effectiveness of phonics instruction in adult literacy classes (p.11). Brooks et al. (ibid. p.57) point out that there were very few teachers that had a structured approach to phonics instruction and comment that often misleading information was given to learners mostly when decoding or spelling situations arose and with poor attention paid to phoneme and grapheme correspondences. Furthermore, in Brooks et al.'s (ibid.) view, as accurate phonics instruction was one of the strategies that was rarely seen whilst conducting their research and accurate phonics teaching has been proven to be effective, there should be more research conducted in this field so that these strategies and their effectiveness can be investigated further. Research carried out earlier by Connelly (2002), identified that trainee teachers likely needed instruction to improve their knowledge of grapheme phoneme correspondences to enable them to pass this knowledge on to learners. In schools that adopt Ruth Miskin's programme staff are trained by a Read Write Inc. trainer. This was not possible for me; however, it was possible to observe several classes by a trained teacher for a few weeks which highlighted areas where I had to take care and familiarised me with this particular method of phonics instruction. It was helpful as observing the teacher and having discussions with her about some of the errors that can be made when teaching phonics highlighted areas where errors could be made in phonics instruction. In particular, care had to be taken in the presenting the phoneme/grapheme correspondences accurately.

When describing effective instruction, McShane (2005, pp. 128-129) mentions some of the strategies that I tried to follow in the phonics instruction classes where the

research was carried out for this thesis. It was made clear at the beginning of the instruction how each activity was aimed at a learning goal and what the learning goals were. The questionnaires and Word Attack, Word Identification and Spelling tests, done at the beginning of the semester were a starting point for me to gain background knowledge on the students. Although instruction was explicit, I was careful not to mention the hypothesis that phonics instruction might improve phoneme awareness and ultimately reading and spelling as these are areas I was hoping the students would work out for themselves if they found it was the case. McShane (ibid.) defines strategy instruction as not to teach content, but to teach learning tools. One of the examples of these strategies was to teach phonic rules which were the main objective of the classes. Students were instructed how to use the strategy of phoneme and grapheme correspondences when they needed them. In 2007 and 2008, the lack of evidence relating to specific teaching strategies gave rise to a project run by the National Research and Development Centre for Adult Literacy and Numeracy (NRDC) specifically relating to teaching strategies in adult literacy and the research by Burton et al. (2008, p.9) looked at the development of the materials and methods and refining of these materials and methods. The teachers in the abovementioned project received four days of training to enable the teachers' confidence in adapting materials and in answering learners' queries. Some teachers found this training as "invaluable when designing handouts and worksheets where [they] could avoid words and sounds which would confuse [their] learners". Teacher training, when it comes to phonics instruction, is outside the scope of this investigation, but a topic that I had to consider before beginning my research. The observation of classes teaching the Ruth Miskin method was invaluable and highlighted some areas where I could possibly confuse participants and where I had to take care as I mentioned previously. One area where I thought the students might get confused was the different accents to which they were exposed, however, this did not cause any problems that I was aware of.

2.9   Accent

The range of accents the learners are exposed to in the institution, where the research was carried out for the purpose of this thesis, is very wide. The accent in Ruth Miskin's textbooks is Received Pronunciation (RP). Apart from a few instances

where the learners might have mentioned the differences in the spelling and accent between the British and the American systems there were no complications. Burton et al. (2008), comment that RP is the accent that is mostly understood globally and that it is now chosen out of convenience as most textbooks use this accent.

From my personal experience teaching in the institution where this research was carried out, I found that similar questions asked by students with regard to spelling initiated a phonics instruction section that was unplanned in the lesson, a situation that often occurs in adult classes, which was mentioned above as being how phonics instruction often take place in adult classes. The motivation of this research was to improve on this situation, both for students and teachers, and I therefore considered the characteristics of action research (AR) being the most suitable research method in this situation. The rationale for this is discussed in Chapter 3.

2.10 The debate on phonics instruction

In their systematic tertiary review on the effectiveness of phonics on reading Torgerson et al. (2019, pp. 209-213), present a detailed account of the background to the policy context for phonics in the national curriculum (NC) in England. The NC for English in state schools in England has changed three times since 1989. In 1989 the reference to phonics was - "Pupils should be able to … use picture and context cues, words recognised on sight and phonic cues in reading" (Department of Education and Science 1989, p.7). The 1995 and 1999 national curriculums provided more details of phonics, but gave no specific mention of phoneme and grapheme correspondences (DfEE1998 and DfEE1999). Reports from the National Reading Panel (2000) on how to teach children to read and Ehri et al.'s (2001) research on how systematic phonics instruction helps students to read, research on teaching of phonics in England increased. With a report from the Office for Standards in Education, Children's Services and Skills (Ofsted 2002), about the first four years of phonics instruction and the publishing of materials with regard to phonics instruction (DfES 2004), Torgerson et al. (2019, p. 210) highlight that phonics, in fifteen years moved, "… from virtual invisibility to being a central concern". Research carried out in Scotland by Johnston and Watson in 2004 in the Clackmannanshire study, compared synthetic phonics to analytic phonics and concluded that synthetic phonics

was the better approach when teaching reading. This inspired an enquiry held by a parliamentary committee in 2004-2005 into teaching children to read. Following the report by the parliamentary committee the British government commissioned a systematic review of the research on phonics instruction when teaching reading and spelling (Torgerson et al. 2006) and the Rose Review (2006) discussed earlier. Torgerson et al. (2006) concluded that systematic phonics instruction enabled children to make better progress in word recognition than unsystematic or no phonics instruction, however, there was not enough evidence to determine that systematic phonics instruction enabled children to make better progress in comprehension or decide whether synthetic or analytic phonics is more effective. Rose (2006) reported that systematic synthetic phonics was the more effective approach. This comment was controversial and thought to "… [go] beyond the evidence" because of the conclusion, made by Rose, that synthetic phonics equated to systematic phonics Torgerson et al. 2019, p.211). The pilot project, The Early Reading Development Pilot, established by the government, on synthetic phonics started in the 2005/2006 school year. Thereafter, The Communication Language and Literacy Development Programme introducing synthetic phonics to schools began in the years 2006/2007 till 2009/2010. Machin et al. (2016) reported children aged 5 – 7 given synthetic phonics instruction showed an improvement, but there was no average effect on children aged 11. Children who were underachieving and non-native speakers of English showed signs of improvement. From 2010 – 2012 commercial publishers had to re-submit their systematic programmes with self-assessments and one of the criteria to be added was that their programmes be synthetic. The resubmissions were judged by criteria set out by Rose (2006). Torgerson et al. (2019, p.212) report that half of the schemes failed because they contained both linguistic and phonetic errors. Beard et al. (2019, p.87) highlight that there were hardly any errors in the programmes that met the Rose criteria. However, Beard et al. (2019), acted as independent evaluators on systematic phonics programmes that have been listed on a central government website. These programmes were previously assessed by their respective publishers and judged to be accurate by a small panel of independent evaluators. Beard et al. (2019, p.93) report that from their perspective "the linguistic errors in current phonics programmes pose a significant risk, not only to the national curriculum, but also to the quality of the teaching and learning of early reading". They equated the errors to mathematical programmes confusing notations

or science programmes referring inaccurately to chemical elements and that the grapheme/phoneme inconsistencies in these programmes "would only add to the difficulties that some children experience when learning to read" (p. 93).

One of the most controversial developments in the NC is the implementation of the phonics screening test for Year 1 pupils (five and six-year-olds). Torgerson et al. (2019, p.212) refer to this screening as "… a test in all but name". Darnell et al. (2017) analysed the test as including items that require word knowledge as well as grapheme/phoneme correspondences and that some of the grapheme/phoneme correspondences that are listed on the government's specification are not included in the test. Brooks (2017), strongly opposes the test and feels it is immoral educationally. Walker et al. (2015, p.67), in their final report from the National Foundation for Education Research on the test revealed that:

> No improvements could be attributed to the introduction of the check, nor any identifiable impact on pupil progress in literacy for learners with different levels of prior attainment.

In 2013 the NC was published for implementation in 2014 and there is a clear summary of synthetic phonics for reading included and according to Torgerson et al. (2019, p. 213), the definition of synthetic phonics use with identifying unfamiliar printed words is correct. Furthermore, with the comments in the curriculum using synthetic phonics for spelling and reading in Year 2 and the idea that phonics instruction should be completed by Year 2 allowing for the comprehension and enjoyment of reading to develop, in their opinion, gives a balanced view.

The controversy about synthetic phonics being chosen above analytic phonics and implemented in the NC before research justified it as being the superior method could be settled if the randomised controlled trial recommended by Torgerson et al, (2006) ten years ago was undertaken is still the opinion of Torgerson et al. in 2019. Castles et al. (2018) summarise all essential features for a balanced approach for teaching literacy in the hope that their review will put an end to what they call the *Reading Wars*. They start their review by querying why these wars have continued over decades when, in their opinion, scientific evidence has proven that phonics instruction is central to learning to read, and wonder why there is still resistance to

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using phonics. Torgerson et al. (2019, p. 211) claim that in England "the place of phonics as part of the initial teaching of literacy now seems largely accepted". Castles et al. (2018) believe that the factors that contribute to the resistance to using phonics are that practitioners lack the knowledge as to why phonics instruction works in alphabetic systems and their knowledge that there is more to acquiring reading skills than learning alphabetic skills. In their review they attempt to explain not only the *"whats (sic)* of the evidence, but also the *whys"* (their italics) (p.38). They give the broad implications of their review with regard to developing criteria for instruction and research in reading acquisition. The first one is that teachers and researchers be equipped with the knowledge of the structure of their respective writing systems. They feel that there is still much research required to ascertain how children learn about their respective writing systems and how writing systems represent sound and meaning. The second implication is that the term "balanced instruction" be reclassified in a more subtle way, so that the balance of the different aspects of reading instruction such as, "alphabetic decoding, fluent word reading, text comprehension" can be given in "a developmentally informed and balanced literacy instruction program". Although there was a similar comprehensive review on the teaching of reading published over a decade ago (Rayner et al. 2001), Castles et al. (2018) are hoping that their current review will contribute to the ending of the *reading wars.*

In summary, with regard to the continuing debate on phonics instruction the following matters are still up for debate:

1. There is "still not enough evidence to show that any particular form of phonics instruction is superior to any other form (Torgerson et al. 2019).
2. The British government's firm pressure to implement synthetic phonics before it has been identified as the superior phonics instruction programme has placed the overall picture of phonics in the NC for English in England in an initial tentative phase. "How accurate that implementation is remains to be investigated, as does its continued effectiveness" (Torgerson et al, 2019 p.213).
3. The implementation of the Year 1 phonics test has caused vocal opposition. Darnell et al. (2017) conducted a detailed analysis on the test and specified

that to decode all items not only grapheme/phoneme correspondence knowledge is required, but word knowledge, and even though not all the grapheme/phoneme correspondences listed by the government are tested the test is still being carried out. Walker et al. (2015, p. 67) compiled a report on the test revealing that the test "gave no contribution to improvement on pupils' progress in literacy".

4. The claim that there is still some resistance to phonics instruction methods being accepted in the classroom even though there is extensive scientific evidence supporting them and the need for teacher training (Castles et al. 2018, p.38).

5. The inaccuracies found in grapheme/phoneme correspondences in approved phonics instruction programmes that are used by schools for phonics instruction on the British government website (Beard et al 2019).

This chapter has reviewed the literature on reading and phonics instruction with regard to pedagogy on phonics instruction relating to L1 and L2. From the ongoing debate topics mentioned above it can be seen that researchers and commentators in the field of phonics acknowledge more research is required to ascertain which method of phonics instruction is superior so that decisions in the educational field can be justified. It would appear that an independent review needs to be carried out with regard to the phonics programmes on the British government website to enable errors to be rectified. Although there is scientific evidence that systematic phonics instruction is beneficial to acquiring grapheme/phoneme correspondences, further teacher training is required to utilise phonics instruction for reading acquisition.

2.11 Cross linguistic Interference

2.11.1 Defining Cross Linguistic Interference (CLI)

Cross linguistic interference defined by Odlin (1989,27) is the "… influence resulting from similarities and differences between the target language and any other language that has been previously (and perhaps imperfectly) acquired". The two types of transfer that Odlin (1989) mentions are the borrowing transfer which is when L2 influences L1, and alternatively the substratum transfer which is when the acquisition of L2 is influenced, either negatively or positively, by L1. The lower the level of learner, the higher the risk of the negative transfer as it is unlikely the learner

will be aware of the differences (James, 2013). Below I will identify some differences between English and Arabic and indicate how these differences affect Arabic learners of English.

2.11.2 Differences between English and Arabic and possible CLI in this research

In the English alphabet there are twenty six letters; five vowels and twenty one consonants. In the Arabic alphabet there are 28 letters that represent consonants and eight vowels that are not usually represented in writing, but if so, representation will be in the form of diacritics. In English vowels are a vital part of written text. Whilst carrying out the research for this thesis the consonant and vowel charts from *Read Write Inc Get Spelling Series* were used. There are twenty four consonant speech sounds listed on the consonant chart (See Appendix 5) and there are twenty vowel speech sounds illustrated on the vowel chart (See Appendix 8). These lists were adapted by myself by inserting words to illustrate the phonemes in an attempt to make the sounds easier for the participants to recognise.

The difference of quality and length of vowels between English and Arabic is quite significant. In English the use of short and long vowels is critical in the comprehension of meaning, however, in Arabic, the three short vowels are considered insignificant as they are allophonic and long vowels are used as an infix (Racoma, 2019). In Arabic the short vowels are usually not included in written text.

Al Haisoni et al. (2015), Hamad (2016) and Othman (2018), carried out research on Arabic learners of English and concluded that errors in spelling were most prominent in the area of vowel sounds, diphthongs and words in English that included silent letters. There are vowel sounds that exist in English that do not exist in Arabic and this is an area that could have affected participants in this research as they tried to learn the unfamiliar sounds as well as the phoneme and grapheme correspondences for the vowels. The studies, mentioned above, concluded that L1 interference

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occurred not only due to the irregularities of spelling in English, but also to L1 interference when it came to vowel use and recognition.

The irregularities in English spelling create some misunderstandings for Arabic learners of English. Studies carried out by Al Saudi (2013) and Benyo (2014) showed that not only did the participants have difficulty with the vowel sounds, but also the irregularity of English spelling rules. Whilst carrying out the research for this thesis part of the instruction was to introduce what Ruth Miskin calls *red words.* The words below are some of the words taken from her red word chart that have the same vowel sound, but unusual spelling such as:

- two do
- where their there
- could should would

or the same spelling and different vowel sound such as:

- rough enough thought brought
- cough though through
- learn early heart
- caught daughter naughty laugh
- one done once love move

or words Ruth Miskin refers to as *odd-ball words* such as:

- the said I to are they come some were does people friend
- won son honest
- biscuit fruit juice building
- young shoulder
- sure muscle.

Therefore, with the difference in vowel sounds between Arabic and English and the significance of vowels in English which is not present in Arabic as well as the irregularities in English spelling, the presence of L1 influence by the participants in this research is possible. However, the extent of this influence is outside the scope

of this research and would require further research. The divergence between English orthography and pronunciation (as indicated by the *red words* above) cause confusion to Arabic learners because in Arabic, spelling is regular according to its pronunciation while in English it is not, as is indicated by examples given above (Othman, 2018). Aqel (1993) discusses the orthographic complexity between English and Arabic and that sounds that are not pronounced are omitted by Arabic speakers. This can occur when silent letters are omitted as the h in which or t in listen, or omitting the phoneme /e/ at the end of words such as have or omitting the double consonant in words such as swimming (Harb, 2018). Harb (2018), identifies other areas where CLI can affect spelling in Arabic learners of English. The areas are substitution errors in vowels, plural forms and consonants such as: (his) instead of (has), or (classez) instead of (classes) and (how) instead of (who) respectively. Another error caused by lack of knowledge of English orthography is what Harb (ibid.) refers to as insertion errors such as (withe) instead of (with) or (haveing) instead of (having). Similarly, transposition errors where the vowels are in the incorrect order such as (freind) instead of (friend) – (thier) instead of (their).

Swan & Smith (2001) identify the main areas where L1 influences L2 as phonology, orthography, punctuation, grammar and vocabulary. The areas that would be most relevant to this research would be the phonology and orthography. The knowledge of phoneme and grapheme correspondences as well as the irregularities of spelling in English are a challenge for Arabic learners of English.

There are other differences where CLI might have occurred with participants in this research and caused confusion, however, the most probable occasions are those that are mentioned above. There are other areas such as word stress that can change the meaning of a word in English, whereas stress does not affect word meaning in Arabic. For example, the word object as a noun /ɒbˈd͡ʒekt/ compared to the word as a verb - to object /ˈɒbd͡ʒekt/. Possibly sound elision, which does not occur in Arabic, could have some effect on Arabic learners. The spelling of words in Arabic is closely associated with the sound of the letters, so sound elision would not occur as it does in English with words such as dunno or wanna (Racoma, 2019).

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One final consideration of where CLI could take place would be in the writing systems considering Arabic writing style starts from right to left, whereas English starts from left to right.

3   Chapter 3 - Research Methodology

3.1   Introduction

This chapter outlines the methodological approach and data collection techniques employed within this research.   Initially the ontological and epistemological perspectives are discussed detailing the assumptions followed in this research. Various research methods are outlined with a rationalisation as to why action research (AR) was the chosen methodological approach for this research.   I give details of the institution where the research was carried out as well as information about the participants. I discuss the programme I adopted as a basis for the material used in the classroom pedagogy and describe how this material and material used for testing and collecting data added to the reliability and validity to data gathered. A detailed description of the pedagogy used during the collection of the data, firstly with the pilot group, is discussed and copies of materials used with the pilot group are given. Within this section I document changes made to the material that is then used during the phonics instruction lessons and tests with the comparison and treatment groups. Finally, there is a summary of the tools/material used for data collection.

3.2   Ontological and Epistemological Perspectives

The action research (AR) project started from questions concerning the reading of Emiratis and if having phonics instruction would improve their reading. Grix, (2002, p.177) claims "ontology is the starting point of all research" and Blaikie (2000, p. 8) suggests that "ontological assumptions are concerned with what we believe constitutes social reality". Whilst teaching in the institution, where the research for this thesis was carried out, I became aware of the situation that most of the students in the institution had difficulty in encoding, decoding and as well as struggling in reading also had little interest therein. A colleague, who noticed the same situation, started phonics instruction and shared his observation that the students, who usually showed little skills or interest in encoding, decoding or reading, were both attentive and intrigued at the concept. This encouraged me to start phonics instruction and as the students showed the same response as my colleague had received, I was inspired to use this as research for this thesis. The objective of this research was to ascertain how much implementing phonics instruction into the curriculum of the

participants would improve their phonics awareness and reading skills. These claims and assumptions were made on what I thought was the "social reality" that existed. Looking at this from the "realist position" I was interested to ascertain whether this position came from within the participant's consciousness, in other words, did they not see the worth of phonics instruction? On the other hand, was it from lack of phonics instruction being a reality that is external and independent of their consciousness, namely their education (Blaikie, 2000, p.8; Cohen, et al., 2000, p. 6)? Whilst exploring the context of education research Cohen, et al., (ibid., p.3) explain how ontological assumptions lead to epistemological assumptions.

Epistemology refers to the basis of knowledge; how that knowledge can be obtained, the validity and range of the knowledge and how to distinguish between belief and opinions (Cohen, Manion & Morrison 2000, 2007, 2011; Waring 2011). Epistemology asks the question, what is the nature of the relationship between the would-be knower and what can be known (Guba & Lincoln 1994, p.108).

I consider this action research (AR) follows multi-paradigmatic elements. Within the multi-paradigmatic design space, researchers need to maintain contact with all epistemologies and maintain vigilant of the type of logic they are employing to establish the type of tools available from research paradigms (Taylor, Taylor & Luitel 2012, Taylor & Medina, 2013). Taylor & Medina, (2013, p.12), believe that educational researchers can "make a major contribution to aligning curricula, teacher education and classroom teaching" by drawing from multiple paradigms. The three paradigms that this research draws from are: post-positivist, interpretivist and critical. I will discuss the characteristics of the three paradigms detailing which elements of each paradigm my research follows.

3.2.1 Post-positivism

Post-positivist researchers are encouraged to use the scientific method, however unlike positivism, a post-positivist takes into account that this method will be influenced by the researcher's human shortcomings. Post-positivism is a scientific methodology that takes into account how the variables may affect the outcome of the research. Errors such as biases or judgements made on incorrect or incomplete information could be present in the research at any time (Philips and Burbules, 2000). Willis (2007), defines post-positivism, as a milder form of positivism, however,

the same principles are followed with more interaction allowed between the participants and participants.

Tekin & Kotaman (2013) list the following assumptions for the post-positive approach:

1. Objective and extrinsic reality exist.
2. Neither objective and extrinsic reality can be obtained by the researcher as the researcher cannot be objective because of biases that would impact on the research. They claim, that because of "social issues being complex and interrelated" it would be impossible to control all variables and lastly, that because everything is "subjected to evolution and change and nothing is stable" it is impossible to reach permanent facts.
3. Post-positivist researchers endeavour to get as close to facts as is possible therefore allowing these facts to be valid within a society for a period of time.
4. There should be collaboration between participants and the researcher in post-positivist research.
5. Post-positivist researchers, in an effort to "acquire as comprehensive a grasp on reality as possible", should use multiple sources to collect data (p.84).

Post-positivist researchers endeavour to gain insight by gathering in-depth data and using multiple research techniques. These techniques add to the validity and reliability of the data and using this triangulation process prevents possible bias being present in the conclusion. The aim is to produce objective and generalisable data. Therefore, post-positivist research quality standards are objectivity, validity and reliability. Often post-positive research is looked at as a beginning to possible further post-positivist research (Robson, 2000; Taylor & Medina, 2013; Tekin & Kotaman 2013).

3.2.1.1 Post-positivism and my research

In this research an effort to counteract any bias I might have had as the researcher was taken into consideration when choosing different sources to collect in-depth data to justify the reliability and validity of the conclusion which is possible in a post-positivist paradigm (Philips & Burbules, 2000). Furthermore, Philips & Burbules (2000), posit that post-positivists use accurate information to gain justification to their claims and an effort to maintain accuracy at all times of data collection was carried out at all levels of data collection in this research. Therefore, taking objectivity, validity and reliability into consideration, when it came to my research, the triangulation of data collection was maintained, plus a mixed method of approach, discussed below in this chapter, of collecting both qualitative and quantitative data. My effort to gain in-depth data and collaboration and involvement with the participants is an area that I felt kept my research within the aims of post-positivism. The questionnaires completed by the participants at the beginning and end of the semesters as well as observation of the participants gathered qualitative data and the tests given at the same times gathered the quantitative data. This mixed methods approach corresponds with the post-positivist epistemology (Giddings, 2006). Moreover, the type of approach to carry out this research using various tools and methods to investigate hypotheses involving both qualitative and quantitative data allowed me to conduct socio-educational research within the post-positivist paradigm. It allows me the flexibility and able to interact and collaborate with the participants and evolve with the research, being self-reflective and self-critical (Philips & Burbules, 2000, Taylor & Medina, 2013). Philips & Burbules (ibid., p.3) claim that "when researchers in education are trying to improve both practices, they need to strive to research rigorously whilst learning. The aim of post-positivist researchers is to keep the quest for knowledge alive". The aim of this research was, as mentioned above, to ascertain if phonics instruction would improve the participants phonics awareness and reading skills, but also to implement this instruction into the curriculum of the institution if it proved advantageous to the students. This aim follows post-positivism with regard to keeping knowledge alive with not only improving the knowledge of the participants, but the teachers of the institution and me as the researcher. One of the approaches of post-positivism sees the

"researcher as a learner who is flexible, open minded, self-reflexive and self-critical" all characteristics of AR, placing this research within the post-positivism paradigm (Tekin & Kotaman 2013, p.84).

3.2.2   Interpretivism

The interpretivist paradigm is not only concerned with the individual, but also the understanding of the subjectivity of the human experience.   Within this paradigm, researchers aim is to gain an understanding of the social realities of those experiencing them (Cohen, et al. 2011).   Tekin & Kotaman, (2013, p.85) define the assumptions of interpretivism as:

1. Each person is unique in his/her reality and how he/she conceptualises his/her experiences.
2. The researcher is integrated in the research and affects and is affected by the social phenomenon being researched.
3. It is necessary to understand the participants well to be able to ascertain why "social institutions, customs, beliefs function in the way they function".

When it comes to interpretivism in education, in accordance with the fact that every person is unique, a researcher would recognise that each individual has his/her strengths and weaknesses.   Therefore, within this paradigm, a researcher must consider each individual's "interests, needs, talents and tendencies during the education process" (Tekin & Kotaman, 2013, p. 85).

3.2.2.1   My research and interpretivism:

The assumptions in interpretivism that my research follows are the realisation of the uniqueness of individuals and their learning skills and the immersion of myself into the culture of the institution and participants.   I was able to observe the individual learning styles of the participants and accommodate their learning environment being aware of what was expected of them from the institution as students.   This made it possible to understand the participants' reactions to the research.   When this paradigm, according to Taylor & Medina (2013, p.4), is applied to educational

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research, "this paradigm enables researchers to build rich local understandings of the life-world experiences of teachers and students and of the cultures of [the] classroom". My focus was on who my students were and all they were facing when it came to what was expected of them and their reading skills whilst taking into account the possibility of changing the curriculum to a student-centred pedagogy. I had to focus on the social, political, historic and economic forces that shaped their pedagogy and historical educational situation, as it was my goal to have a student-centred pedagogy when it came to reading by including phonics instruction in the curriculum. To maintain credibility, I endeavoured to maintain trustworthiness within the institution itself, with the teachers that were teaching the participants full time and with the participants themselves. I created a meaningful learning experience by being responsive to the participants' interests giving the participants an opportunity to learn phonics taking into account their feedback to ensure the instruction was in their interest to achieve my goal of a student-centred pedagogy. The aim of interpretive inquiry, in the educational field, is teachers should be "reflective practitioners in developing enhanced understanding of the life-worlds of their students" (Taylor & Medina, 2013, p.5).

3.2.3   The Critical Paradigm

The critical research paradigm is concerned with practicality with the purpose to "bring about a more just, egalitarian society in which individual and collective freedoms are practised" (Cohen et al., 2011, p. 27). The aim of the critical researcher is to engage in scientific research using objective quantitative strategies, as well as using research techniques within the interpretive paradigm. It is necessary for the critical paradigm researcher to be democratic. In education, critical inquiry initially encourages teachers to look at existing situations and encourages them to become critical thinkers about "designing curricula and assessments that are more student centred, inquiry oriented, culturally sensitive, community oriented, socially responsible etc." (Taylor & Medina, 2013, p.7). It is important for researchers in this paradigm to be critically self-aware, as well as aware of the social situation with the aim to improve both teaching and learning. Critical action research is a type of research that advocates making a difference and is not only an action of research, but one of practice and gives the researcher a voice (Cohen et al., 2011, p.29; Taylor & Medina, 2013).

3.2.3.1 My research and the critical paradigm

The assumptions of being just and considering the individual and collective interests in the critical paradigm were of prime importance in this research as consideration was needed for the institution and the participants during the research at all times. The triangulation of data collection and statistical analysis of data added to the validity and reliability required within the critical paradigm. AR, the methodology chosen for this research, gave me the opportunity to participate in the research as teacher/researcher with the aim to adding phonics instruction to the curriculum and giving the opportunity to share with the teachers within the students' programmes the effects phonics instruction would have on the participants' reading skills.

3.2.4 Multi-Paradigmatic Research and my research

By drawing on interpretive and critical paradigms researchers can combine methods and quality standards forming "very powerful means of transformative professional development" (Taylor & Medina, 2013, p.10). It is possible, in a multi-paradigmatic research paradigm to draw on interpretive and critical paradigms, as I have done in this research, by working collaboratively with teachers, to improve situations, such as curricula (Taylor, 2008, p.7). In this research, I was required to examine critically how reading was being taught at the institution and whether the inclusion of phonics instruction in the curriculum would be beneficial. Researchers in the multi-paradigmatic approach are seen as "change agents who wish to transform the policies of teaching and learning" (Taylor, et al., 2012, p.10). By drawing on the three paradigms, post-positivism, interpretivism and critical theory and recognising the value each poses, I place my research in the multiple research paradigm because of the interdependence of the paradigms. Taylor et al., (2012, p.13) name the interconnectedness of multiple paradigms as "moments of truth" and how each paradigm produces valuable knowledge and at the same time "rejects attempts to privilege any single paradigmatic way of knowing".

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3.3   Research Methodology

3.3.1   Qualitative Research

In qualitative research the researcher endeavours to investigate and understand the meaning individuals or groups would attribute to either a social or cultural phenomenon (Astalin, 2013; Creswell, 2014). Four types of qualitative design that Astalin (2013), mentions are phenomenology, ethnography, grounded theory and case study.

In qualitative observational research the researcher is able to study the individuals or groups in his/her or their natural settings and therefore the researcher has very little control over incidents that might occur during the time the research is being conducted.   However, the immersion in the naturalistic scenario enables the researcher to not only discover answers about the phenomena during observation, but also form questions. The hypotheses theories can change continuously during the research meaning the researcher needs to be flexible. Finding answers to the questions can lead to further research within the research being carried out at the time or further research projects.   When conducting qualitative research, the researcher must take a holistic perspective and often a phenomenon affecting the research might be specifically connected to with the topic of the research, but prevalent in the lives of the participants. One of the drawbacks a researcher has to be aware of is bias; because of being immersed within the study there is always the possibility of bias, so the researcher has to remain neutral and non-judgemental for the research to be reliable and valid. In qualitative research the researcher is aware that every situation is unique and answers to questions are more than often in-depth than yes/no questions (Patton, 1980).

The qualitative data in this research consists of information that was gained through observation of the treatment groups during the lessons.   The type of observation would be described by Creswell (2014), as "observer as participant – role of researcher is known" (p.191). The advantages were that I had first-hand experience of responses to activities during instruction and could make necessary changes to material, the changes of which are discussed below (Creswell 2014). Responses to open-ended questions on questionnaires given to participants at the end and beginning of semesters provided historical information and were a source of

information whereby the participants had to think about their responses and as the questionnaires were anonymous participants could give an honest response. The variables discussed in Chapter 5 with regard to this research identify some of the cultural aspects towards the research. Creswell (2014) refers to interviews as providing some of the data that the questionnaires supplied, however, the participants in this research declined the option of having interviews, therefore, the open-ended questions in the questionnaires were useful in this regard, as well as, questions I asked the participants in the final classes of the research (See Chapter 5). Bryman (2006, p.100), comments on some confusion by researchers quantifying open-ended questions on questionnaires as qualitative data, however, the data collected from the open-ended questions in this research related to some cultural perspectives of the study and combined with the observation of the participants and the discussions in classes mentioned above, I considered this qualitative data valuable as it added data that I had not anticipated which is expected from qualitative methods (See Chapter 5) (Bryman, 2006).

3.3.2   Quantitative Research

The objective in quantitative research is to reach a conclusion between one variable and another within a study group. Quantitative research methodology uses structured data collection tools such as experiments, tests, surveys and observation to come to a logical and objective conclusion and the tools and method of collecting data are designed prior to the commencement of the research. Quantitative research can either be descriptive establishing associations between variables or experimental with an intervention or treatment put in place and the effects of the intervention or treatment are then interpreted. The outcome of these results will be compared with a control group. The results of the treatment group are taken to represent the whole and optimally the group should be large enough for the research questions to be answered objectively. These findings in quantitative research will involve some statistical analysis, be it in the data organisation, the description of the findings or a complex analysis. Reliability and validity are key to quantitative research, as they are with any research. In quantitative research reliability is dependent on how well the data that is collected can be reproduced and validity in keeping the findings of the results accurate (Meadows, 2003).

This research would be classified as an experimental study. The groups for this research were classes already formed and assigned by the institution and class teachers to be either the treatment group and receive phonics instruction or the comparison group and not receive phonics instruction (Creswell, 2014, p.168). The treatment groups and the control groups received a pre-test and a post-test described below. There was a pilot group and the results of this experiment resulted in changes to material to increase the reliability and validity of the data taken form the treatment group and comparison group. Care was taken to maintain validity with both internal and external threats.

3.3.2.1 Internal Threats

The participants in the research received similar classes with regard to English. The class teachers and I collaborated with regard to the phonics instruction and there was care taken that phonics instruction would not be given to comparison groups in an attempt to reduce the threat of external events affecting the data. In each semester all participants were the same English levels in the class in an attempt to maintain the same level of change and age as much as possible. I had no input into which class would receive instruction therefore it was not possible for me to favour participants with extreme scores. As can be seen in the results section one of the comparison classes comprised of participants who were at a higher level than the treatment group in that semester. The one internal threat I had no control over during this research was attendance and unfortunately, as can be seen in the results section, the attendance to classes and tests was in some cases low. The internal threat of demoralising the comparison group was a reality and the participants in these classes were assured that their teachers in the future semesters would cover the phonics instruction. They were also given the opportunity to come and have phonics instruction as a tutorial with me if they wished. Because of the nature of the tests it would have been impossible for the participants to remember the responses and pass them on to future participants (Creswell, 2014, p.175).

3.3.2.2 External threats

Two external threats to this research could be that this data cannot be generalised to other L2 learners who do not have the same characteristics or have different settings to the participants in this research. A third could be that because of the time frame generalisation would not be possible referring to past or future situations. These

threats mentioned by Creswell (2014, p.176) are valid, but outside the scope of this research and a possibility for future research.

To obtain a stronger understanding of how phonics instruction would facilitate reading I decided to use the combination of both qualitative and quantitative methods of collecting data by adopting the mixed methods research approach.

3.3.3 Mixed Methods Research

Johnson et al. (2007) examined how mixed methods research was being defined and describe it as "... a synthesis that includes ideas from qualitative and quantitative research". In their review of looking at various definitions of mixed methods research by leaders in the field, they note both agreement and difference in the definitions, which from their perspective is a good thing as they see mixed method research as an "... emerging research paradigm" (p. 123). Based on their analysis of all the definitions, they give a general definition of mixed method research as:

> Mixed methods research is the type of research in which a researcher or team of researchers combines elements of qualitative and quantitative research approaches (e.g., use of qualitative and quantitative viewpoints, data collection, analysis, inference techniques) for the broad purposes of breadth and depth of understanding and corroboration (p.123).

The aim of using mixed methods research is to provide a more robust understanding of the research than can be obtained using either qualitative or quantitative research methods alone. Cresswell (2014), claims that mixed methods research not only adds breadth and depth to research as mentioned above, but that it counteracts the weaknesses of each approach.

Johnson et al. (2007, p.123) illustrate three major paradigms of mixed methods research being either qualitative dominant, of equal status which is when the researcher believes "that both qualitative and quantitative data and approaches will add insights to most if not all research questions", or quantitative dominant. In mixed method research there are notations used to indicate emphasis or priority on either

the quantitative or qualitative data. Quan and Qual stand for quantitative and qualitative respectively. Should uppercase letters be used it would indicate that the capitalised letters would be the more dominant method.

I considered the advantages of combining both quantitative and qualitative research approaches to bring both depth and breadth into answering the research questions. I acknowledged that across the continuum I could have either qualitative or quantitative dominant mixed methods of research. This research would fit into the QUAN+qual research symbol, as I felt that it was beneficial to include qualitative data and approaches into my dominant quantitative research because of the advantages the corroboration of the two methods would add to my research and analysis as mentioned above. Mixed method research is defined as a powerful paradigm choice as the importance of the traditional quantitative and qualitative research is recognised while combining both can provide informative, complete, balanced and useful research results (Johnson, et al., 2007, p.129). Johnson et al., (ibid., pp.125-126) bring up the issue of how choosing which philosophy of science or which set of philosophical positions best partner with mixed method results and come to the conclusion that "… variation in particular philosophical commitments should be welcome in mixed methods research" and that these differences should be embraced within the mixed methods research paradigm. Green (2006, p.97), suggests in her discussion about using mixed methods in social enquiry, which paradigm mixed methods research falls into, and that there is not only one paradigm which should be considered, but a "paradigmatic paradigm". She mentions that there may be an alternative paradigm and I maintain this research follows the multi-paradigmatic paradigm discussed above. Johnson et al. (2007, p.129) posit that mixed methods research is the third methodological or research paradigm in the definition given below:

> Mixed methods research is an intellectual and practical synthesis based on qualitative and quantitative research; it is the third methodological or research paradigm (along with qualitative and quantitative research). It recognizes the importance of traditional quantitative and qualitative research but also offers a powerful third paradigm choice that often will provide the most informative, complete, balanced, and useful research results.

There has been a debate over the decades as to whether qualitative and quantitative data can be combined in research. Rossman & Wilson (1985), named three perspectives when discussing this controversy. The first perspective they discuss is that of a group they name the "purists" (p.629). The perspective of this group that focusses mostly on the paradigm level, is that the epistemological and ontological assumptions of qualitative and quantitative approaches are mutually exclusive and it is not possible to combine them in research (Burrell & Morgan, 1979; Smith, 1983; Collins, 1984; Bryman, 1984). The second group, named the "situationalists", have a perspective that differs from the purists, in that it maintains "that both [qualitative and quantitative] approaches have value" (Rossman & Wilson, 1985, p. 630). This group, whom Greene et al., (1989), claim holds the "middle-ground position … retains the paradigmatic integrity stance of the purists", but at the same time feels that "understanding of a given enquiry problem can be significantly enhanced by exploring convergences in stories generated from alternate paradigms" (p.257). The third perspective Rossman & Wilson (1989, p.631) mention is that of a group they name "pragmatists". Rossman & Wilson (1989) claim that most pragmatists believe the division between qualitative and quantitative data is false. They feel that the "trick" is to utilise the strengths of both qualitive and quantitative data to gain understanding (p.631). They conclude that from their experience of combining both methods "… numbers and words can be used together in a variety of ways to produce richer and more insightful analyses of complex phenomena than can be achieved by either one alone" (p.641).

Research combining qualitative and quantitative methods has increased over the years and has become "… a distinctive research in its own right" (Bryman, 2006, p.97). Over the decades both qualitative and quantitative methods of collecting data have been used for AR and discussed in writings in AR (Bailey and Nunan 1996; Wallace, 1998; Burns, 1999; Maxwell and Loomis, 2003; Mills 2003; Cohen et al. 2007; Cohen et al. 2011). Greene et al. (1989, p.259), identify five areas that justify the practicality and rationale of using the mixed method approach such as triangulation, complementarity, development, initiation and expansion which are listed below:

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- Triangulation - seeks convergence, corroboration, and correspondence of results from the different methods.
- Complementarity – seeks elaboration, enhancement, illustration, clarification of the results from one method with the results from the other method.
- Development – seeks to use the results from one method to help develop or inform the other method, where development is broadly construed to include sampling and implementation as well as measurement decisions.
- Initiation seeks the discovery of paradox and contradiction, new perspectives of frameworks, the recasting of questions or results from one method with questions or results from the other method.
- Expansion seeks to extend the breadth and range of inquiry by using different methods for different inquiry components. .

Mixed methods research is seen, by leaders in the field, as a method of research that is generative and productive, a characteristic that is likely to continue as mixed methods research develops. With this in mind, one of the leaders in the field maintains that mixed methods research should be "actively encouraged and nurtured" (Greene, 2008, p.8).

In reference to data analysis, Greene (2008, p.14) refers to the different forms of analyses that would occur in mixed methods research such as numbers and narrative which would have to be analysed interactively. She questions if this integrated analysis is an area of mixed methods methodology where practice will always come first (ibid. p.5). In response to an argument put forward by Sandelowski (2003), where the challenges of how mixed methods research data would be presented are highlighted, Greene (2008, p.16) predicts that there are possible benefits in a "...mixed representational approach". Greene (2008, p.20) concludes with her belief that a "... mixed methods approach to social inquiry *distinctively* (her italics) offers deep and potentially inspirational and catalytic opportunities to meaningfully engage with the differences that matter in today's troubled world, seeking not so much convergence and consensus as opportunities for respectful listening and understanding".

Considering the above discussion, I would concur that the methods used for the research for this thesis are mixed methods. Bryman (2006), asserts there is little doubt that mixed methods research has become more common and that qualitative and quantitative research can be carried out at "different stages of the research process" (p. 101). Consideration, then had to be given to ethical variables that could occur at different stages of the research (Cohen et al., 2007). Ethical considerations are discussed later in this chapter, (see 3.8).

The rationale of using the mixed methods approach in my AR was to ensure a rigorous approach to data collection and analysis and broaden and strengthen the research (Greene et al., 1989; Graham 2005; Bryman 2006; Burke Johnson, Onwuegbuzie and Turner, 2007; Johnson et al., 2007; Cohen et al., 2007; Greene 2008). The combination of the data collected at the beginning, during and end of semesters added credibility and trustworthiness to the analyses. The data collected from the questionnaires at the beginning and the end of the semesters given to both the control and treatment groups were both quantitative and qualitative with the qualitative data adding explanations and understanding to the findings in the quantitative data. The data collected from the tests carried out at the beginning and end of the semesters to both the treatment and control groups were quantitative, however, the qualitative data from the questionnaires and observation of the participants, as well as answers to questions during classes also added explanations and understanding to the findings as discussed in Chapter 5. The combination qualitative and quantitative data collected in my AR research made my results more credible, dependable and reliable (Lincoln and Guba, 1985; Giddings 2001). The findings of the qualitative data not only added explanations and understanding to the quantitative data as mentioned above, but contributed to conclusions made and the recommendations for further research discussed in Chapter 5 (Greene et al. 1989).

3.3.4 Action Research

AR has been carried out for many years, the origins of which, are not clear as Masters (1995) highlights; however, she refers to researchers in the past who have claimed that AR originated with Kurt Lewin, an American psychologist. McKernan (1991) states that there is evidence that AR was carried out prior to Lewin by some social reformists, such as Collier in 1945, Lippitt & Radke in 1946 and Corey in 1953.

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In a historical overview Burns states the "sources of AR are located with a quiet methodological revolution that has been taking place over at least the last 50 years" (2005a, p.242; 2005b p.57). Adelman (1993, p.7) refers to Lewin being the founder of AR and whose students described AR as being a "quest for greater effectiveness". Furthermore, Lewin was referred to by Elliott (1991) and Burns (2005a, p.242 and 2005b, p.57) as the "father of action research". Lewin's vision of AR being "a spiral of steps" is added to by Burns who claims the steps as "planning, action and fact-finding about the result of action (2005b, p.58). AR has been defined as having two activities, one being action and the other research. Burns (2013) describes the action field of AR as carrying out a planned activity within one's daily operations and the research field as systematically collecting data on how this activity impacts on the situation.

Burns (2005b) comments on how AR has evolved since entering the English Language Teaching (ELT) field and how the focus is on action and research. Wallace (1998, p. 19) claims, when dealing with the action component, teachers could look at possible "problem areas" that might be investigated in a systematic way such as classroom management, using appropriate materials, various teaching fields or problems with students or even personal management issues. Wallace (ibid. p.18) refers to what he calls "action research" as being a "... process of reflection through a systematic collection and analysis of data". Burns (2005b, p. 59) discusses the research area of AR as being a systematic way of data collection where a planned intervention is carried out and the data collected is then analysed and findings are reflected upon to ascertain what further observation or action might take place. Burns (ibid. p.59) concludes that when practising AR the processes are flexible to the situation and circumstances of the environment.

Elliot (1991) clarifies AR as being a study carried out in a social situation with the intention of improving the situation therein. Altrichter et al. (1993) state that Elliot's interpretation of AR brought attention to one of the fundamental motivations of carrying out AR, which is to improve the quality and environment of teaching and learning for both teachers and students. The motivation to carry out the research for this thesis was to ascertain if the implementation of phonics instruction would improve reading skills of the students. The teachers in the institution were extremely

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supportive and keen to see the results, because if the phonics instruction proved to help the students with their reading skills, they were eager to investigate methodology in teaching phonics and thereafter introduce phonics instruction into their lessons. Furthermore, the institution itself would implement phonics instruction in the curriculum thereby improving the learning environment for the students. AR has been interpreted to lend itself to teacher improvement with the practicality of moving beyond that scope (Rainey 2000). The research for this thesis started with all of these possibilities in mind. If the lack of phonics instruction was identified as an area that was problematic by this AR research, it was my aim and that of the teachers and the institution to change the situation (McNiff, 2002, p.15). This aim of this AR research was an effort to enhance the competencies of the teaching of phonics, the attitude towards phonics instruction and learning the advantage of phonics instruction on reading skills to individual teachers and students as well as the institution by implementing change to all these areas (Kemmis & McTaggart,1992, p. 16). The collaborative characteristic of AR leads to "enhanced competencies", an attitude foremost in my mind, that of the institution and the class teachers (Baskerville 1999, p.7).

3.3.4.1 Defining action research

AR has been described by many commentators as having the motivation to improve situations and some claim that AR adds understanding as well as improvement to educational situations (Hopkins 1985, Kemmis & McTaggart, 1988; Wallace, 1998; Burns, 1999; Meyer 2000; Waterman, Tillen, Dickson, & de Koning 2001; Winter & Munn-Giddings 2001; Reason & Bradbury, 2006; Dörnyei, 2007; Burns, 2010a). From a philosophical perspective AR, defined by others, can be looked at as self-reflective enquiry with the view to improving understanding in the context of "maximising social justice" (Carr & Kemmis 1986, p.162).

AR has three approaches in education: individual teacher research, collaborative action research and schoolwide action research (Calhoun, 1993). Individual teacher approach, the approach adopted in this research, entails a teacher defining a problematic area, implementing instructional strategies or/and materials and looking at students' cognitive or social behaviour. Support for the teacher/researcher is required from the institution itself as well as any colleagues as was necessary in my AR research. Without the support/collaboration of the institution, the class teachers

and the participants themselves, this AR research would not have been possible. Teacher/researchers can use both qualitative and quantitative data testing a hypothesis as I did. This research may be shared depending on the situation, and if it is done the institution/teachers/participants can benefit as was my aim. I used the Individual Teacher Research approach, as mentioned above, whereby I identified a problem I was interested in investigating and then implemented what I thought would be a solution (Calhoun, 1993). The problem was low reading skills and the implemented probable solution was phonics instruction. The data I collected were predominantly quantitative. The individual teacher approach enabled me to carry out this research "on the spot" as the teacher researcher which led me to have deeper understanding of the situation for myself, the class teachers and the participants (Cohen & Manion, 1994, p. 192). At the same time, I could ensure the AR was being conducted in a disciplined and rigorous way (Hopkins, 1985, p.32). Collaborative Action Research requires a team of two or more researchers and therefore was not appropriate for this AR. In Schoolwide Action Research a school faculty selects an area that is problematic from other schools and therefore this method of AR was also not appropriate in my research (Calhoun, 1993).

Self-reflection has been described as being at the heart of AR, by McNiff (2002) and Warne et al. (2006), and the research to be carried out for the purpose of this thesis gave the opportunity to both myself as the researcher and instructor of the phonics, and the teachers as colleagues, even though they did not participate in the phonics instruction, a chance to self-reflect on our teaching practices. With me being the instructor of firstly the pilot group, I was able to reflect on the tests and material I used and make the changes I felt necessary to improve the instruction for the participants and improve the reliability and validity of the data I would collect from the tests. These changes are discussed later on in this chapter – see 3.10.2. I could also observe the participants during the classes as to what they engaged in more during the instruction and get feedback from the them about the worksheets which I changed due to their feedback; this is also discussed later in this chapter – see 3.10.1. The teachers and I collaborated constantly on the participants' behavioural patterns and responsiveness to the phonics instruction which gave both me, as the researcher, feedback on my instruction and the participants' feelings about the phonics instruction itself and the teachers the possible outlook future students would

have on phonics instruction should the teachers include it in their lessons. The institution itself was interested in the outcome of the research and did not interfere or become involved in the research process, but it maintained contact through the teachers with regard to the participants' involvement. However, the introduction of a *no paper* rule on campus and an introduction of iPads to all students did bring this research to a premature close.

The emphasis on reflection, critical in AR, was maintained during this research with the collaboration of the class teachers, and it was this collaboration that brought about the premature end to this research. The realisation that the participants would not be able to participate in the research on electrical devices as the data would be compromised was a decision made collaboratively taking into consideration both the social and educational nature of AR (Kemmis & McTaggart, 1988; Kemmis & Wilkinson 2002). The need to maintain critical reflection and not only see what I wanted to see from the phonics instruction, as Chambers (1997, p.55), points out as being a possible weakness when professionals may not see the whole picture, but only the "flat reality that they, prisoners of their professionalism, fashion for themselves", was minimised by the collaboration of myself, the participants and the teachers as mentioned above (Bell, 1998).

Burns (2005b) discusses the evolving status of AR over the decades and concludes with some very interesting questions concerning the future path of AR. She raises the point of whether AR is merely an option for personal and professional development or whether AR would be able to produce knowledge in the field of education. She also addresses the question of how the quality of the research can be undertaken.

There are some principal problems that have been identified by teachers carrying out AR such as:

- Lack of time
- Lack of expertise
- Lack of ongoing support
- Fear of being revealed as an incompetent teacher

- Fear of producing a public account of their research for a wider (unknown) audience (Nunan,1993, p.44).

Nunan suggests the following solutions to address the above problems:

- There is someone on the ground to own the project
- One or more individuals with training in research methods are available on tap to provide assistance and support to teachers.
- Teachers are given paid release time from face-to-face teaching during the course of their action research.
- Collaborative focus teams are established so that teachers involved in similar areas of inquiry can support one another.
- Teachers are given adequate training in methods and techniques for identifying issues, collecting data, analysing and interpreting data, and presenting the outcomes of their research (1993, 44-45).

Nunan (1993, p. 48), claims that AR "can be justified in professional development terms and research terms" and that the suspicious attitudes towards academics encouraging a closer relationship between theory, research and practice are changing. Burns (2005b) questions how AR can contribute to the "… sustainability of effective educational practices" whilst dealing with the issues of "curriculum development, social justice and educational political action" (p. 70). Burns responds to these questions with comments on how reflection is needed to increase the participation of teachers in AR if it is to succeed. Moreover, Burns affirms that most teachers who engage in AR feel that it has a positive effect on their profession, and that one of the challenges in AR will be to maximise teachers' participation (2005b, p. 71).

Cohen et al. (2011, p.355) detail the key features of AR all characteristics of AR that were applicable to my research as indicated below:

- Solving real everyday problems that have been identified by a practitioner. (The problem was identified when I was teaching in the institution)
- Needing collaboration and building on teacher involvement. (Close collaboration with all teachers was maintained during the research and after).

- Looking for causes for the problems and working on them. (Finding out if the lack of phonics instruction would improve reading was fundamental in my research).

- Recommending solutions. (My recommendation was to include phonics instruction in the curriculum if it proved beneficial).

- Including different methods of collecting data. (See Section 3.17 – Data Collection)

- Planning an intervention. (Intervention of phonics instruction was planned)

- Implementing the intervention. (Phonics instruction classes were implemented)

- Evaluating the success of the intervention and thereby possibly solving the identified problem. (See Chapter 4).

3.3.4.2 The sequence of AR

There are various sequences of AR that have been described by commentators and they vary from four stages to eight stages (Kemmis & McTaggart 1998; Cohen at al. 2011). The four-stage approach put forward by Kemmis & McTaggart (1998) that is plan, act, observe and reflect, has been, perceived by Burns (1999, 2009), as the approach most used in the educational field of AR. The spiral model proposed by Kemmis & McTaggart (2000, p.595), and described as participatory action research (PAR), is similar to the four-stage model:

- Planning a change.
- Acting and observing the process and consequences of the change.
- Reflecting on these processes and consequences and then replanning.
- Acting and observing.
- Reflecting and so on ...

Kemmis & McTaggart (1998) claim that the spiral stages may overlap and Winter & Munn-Giddings (2001) point out this type of research could take a long time. With this in mind and the fact that I had limited time with the participants, this model was not appropriate for my AR research. It was imperative that I chose a model of AR that suited my research best taking into account the limited amount of time I had with the participants, as well as their commitment to other areas of work within the institution.

I also had to consider the participants class teachers and their timetables (Koshy 2005). Koshy, Koshy & Waterman (2010, p.8) warn that should an AR researcher depend too much on a model's stages or cycles it "…could adversely affect the unique opportunity offered by the emerging nature and flexibility that are the hallmarks of action research". The people affected by the changes in AR are the participants and researchers within the parameters of the research. The goal of AR is to have unquestionable evidence that is authenticated and the result of which is to be used for the benefit of the individuals or groups participating in this research (Burns, 2010b). The model I thought that best suited the AR carried out for the purpose of this thesis is the four-stage model most used in educational research (Burns, 1999, 2009). This four-stage model is detailed below with a description of each stage from Richards and Lockhart (1996, pp.12-13):

- Planning – identifying an area that is problematic that needs to be improved and plan an intervention that will improve this area.
- Act – implementing this intervention.
- Observe – collecting data and analysing data.
- Reflect – observe the effects of the intervention critically and if necessary, revise the intervention.

In my research I followed the above model as follows:

- Planning – I identified the lack of phonics instruction as being an area needing investigation and improvement, with an aim to improving reading.
- Act – I introduced phonics instruction lessons into the participants' programme.
- Observe – Data was collected through giving phonics instruction, tests, questionnaires and analyses were conducted statistically on data collected.
- Reflect – Throughout the data collection the data were reviewed and when necessary revisions were made to the intervention being phonics instruction.

The above model allowed me to make the maximum use of the time I was allocated with the participants for questionnaires, teaching, testing and by observing the participants in their natural environment, I could reflect on material and instruction.

It was not always possible to follow the linear pattern when carrying out this research. There were times where I had to move test times, and sometimes I would arrive to give a class and the participants would not be there. I then had to be flexible with my timing to make up teaching classes or testing which is possible in AR (Koshy, Koshy & Waterman, 2010). Fortunately, the class teachers were supportive and sometimes gave up their class time to give me extra classes. It is a fact that this research did not always follow a smooth pattern either, and often I had to do "creative zig-zagging" as it is called by McNiff & Whitehead (2000, p.202), or deal with "the interwoven aspects" involved in AR by Burns (2010a, p.8). As I was the teacher/researcher I had the flexibility that AR allows and could substitute a scheduled test with a phonics instruction class or vice versa. This happened if the participants were called away on a trip or given an unscheduled class, or as happened on one occasion, given a day off on my allocated teaching day.

3.3.4.3 Teachers as researchers

My motivation to use AR as the tool to acquire the information required to improve both the quality of teaching and learning for both students and teachers is because I could be involved in the process of enquiry on a problem that I was made aware of from my practical experience with the students in my present position and whilst I taught in the institution where I carried out this research. Some of the negative perceptions towards AR did not deter me from my choice. The fact that AR is known for its quality practice, but not being equal in quality theory was defended by McNiff & Whitehead (2005, 2006). They claim that researchers can carry out their research practically, self-reflect and thereafter theorise their findings with the undertaking to understand the research and improve on any concerns which was my goal when commencing this research. By choosing AR as my method of research I could be involved in the process of enquiry that emanated from my practical experience with the students and concern about the students' level of reading. Burns, (2005a, p. 241) refers to researchers in AR being "centrally involved in a systematic process of enquiry arising from their own practical concerns". I was confident that by conducting the research myself, being able to self-reflect and adapt my research where necessary and then collect the data systematically I would be able to present authenticated and viable data. The data could then be shared with my colleagues

and the institution for critical analysis before any action or changes to the curriculum took place (Burns, 2005b; McNiff & Whitehead, 2005).

The opinion that teachers were not able to carry out rigorous research because of time constraints, one of the disadvantages mentioned in this chapter, did not prevent Dörnyei (2007), considering that research done by teachers was considered AR proper. Richards (2003, p.232), claims teachers are natural researchers because they have to work out the needs of their students and evaluate various approaches to teaching, taking note of their reflections and changing teaching practices to improve problematic situations. Teachers have been carrying out AR and detailed below are a few examples of some teachers who have chosen AR as their approach to carry out research spanning over two decades. (See for example: Baker et al. 1986; Aston et al. 1990; Summers, 2000; Van Eysden, 2001; Torrance & Pryor, 2001; Tinker-Sachs, 2002; Nicol et al. 2004; Edwards, 2005; Grandau, 2005; Hadley, 2006; O'connor et al. 2006; Burns & Kurtoglu-Hooton, 2014; Siegel, 2014; Clark, 2018; Gutierrez, 2018).

In a publication by the institute where I carried out my research *Action Research in English Language Teaching in the UAE* (2006), AR by student teachers was recorded as part of their final year requirements of their programme. Clarke (2006, p. 13), claims AR is "suited to addressing the needs of education and schooling in UAE". (See for example some of the student teachers AR: Al Shehhi, 2006; Mehairi, 2006; Saeedi, 2006; Al Ghafri, 2006; Ali, 2006).

AR carried out by teachers in the institute is recorded in the same publication: (Syed, 2006; Thorne, 2006).

From the scope of the AR over the years by teachers, indicated above, the perspective by Burns (2010, p. 2), that AR is a "broad movement" that has been in the educational field for some time is substantiated and it continues to be so. Burns further maintains that for AR to develop it is fundamental that teachers should be involved as they obviously have for decades. Teachers involvement is justified by Cohen et al. (2011, p.344), giving a strong argument that teachers involved in AR:

- Work best on problems that they have identified themselves;

- Become more effective when they are encouraged to examine and assess their own work and then consider ways of working differently;
- Help each other collaboratively;
- Help each other in their professional development by working together.

These characteristics of teachers involved in AR were all relevant in the research carried out for this thesis as well as the AR research mentioned by teachers above.

3.3.4.4 Advantages and disadvantages of AR

AR has been described as an emerging form of research that could bridge the gap between "… research and practice and … researchers and practitioners" (Nunan, 2005, p.234-235, Cohen et al. (2011, p.345). Rapoport (1970) commented on how AR can improve on the relationship between practice and research. According to McNiff & Whitehead (2002, p.1), it is now recognised as a "valid form of enquiry". Furthermore, it has gained interest over the years and there have been contributors to educational AR from all over the world (Cain, 2011). Educational researchers and commentators have both positive and negative outlooks to teachers as researchers, but Nunan (2005) presents some advantages to educational AR as:

- building on knowledge teachers already have

- focussing on the current situation in the classroom

- being in situ

- adding on to process of evaluation and research that teachers carry out daily

- bringing researcher and teacher roles closer together

- enabling teachers to become more self-critical and aware by observing, recording and analysing what goes on in the classroom

- allowing teachers to collect more information and reasons of what goes on in the classroom and why

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- aiding in collaboration between colleagues and other interested parties on the process of teaching and learning

- bringing theory and practice closer.

Adding to the above list of advantages several other supporters of educational AR have commented that AR does not only help identify problems, but by carrying out AR these problems can then be solved, thereby improving situations for both students and teachers. In AR there is the opportunity of using multiple methods of collecting data. Furthermore, the decisions made in the educational field to improve situations can establish the teacher/researcher professionally, whilst influencing change. Findings can be shared and teachers' understanding of their educational environment can be increased (Carr & Kemmis, 1986; Freeman, 1998; McNiff & Whitehead, 2000; Burns, 2009; Burns 2010a; Cohen et al. 2011).

However, as mentioned above, AR in education has received criticism in spite of the advantages listed above. Disadvantages such as:

- Teachers may not have the expertise to carry out reliable and valid research (Richards ibid.; Dörnyei, 2007; Cain, 2011)
- Teachers, who already have time demands, could find it difficult to dedicate the time necessary to carry out research (Freeman, 1998; Dörnyei, 2007)
- Teachers may not have the resources or incentives to carry out AR (Dörnyei, 2007)
- Although AR in education is being recognised as valid and reliable research, there is a chance that in some areas it may not be recognised as such (Rainey, 2000; Dörnyei, 2007, Cain, 2011)
- Teachers may influence participants to respond in a way to please them as the researchers (Brown, 1998; Cain, 2011)
- Teachers as researchers might show bias towards proving their hypothesis or hypotheses (Wallace, 1998, Burns, 2010a)

With the increased exposure that AR in education has received over the years it is likely that teachers who wish to carry out AR will be more knowledgeable and able to develop the skills necessary to produce reliable and valid research (Borg, 2010;

Burns, 2010b; Borg, 2013). In this research, multiple standardised tests were used with score sheets that minimised space for error (See data in Chapter 4).

With regard to time, resources and incentives, this would, I feel, be dependent on the situation and the teacher/researcher. Fortunately, because I had worked for the institution, I was familiar with the supervisors and class teachers who made all resources available to me and my incentive was to complete the research and collect the data hoping that the findings would be of benefit to the participants, the teachers, future students and the institution. The timing of the phonics classes, tests and questionnaires was manageable with my schedule and that of the class teachers.

Cain's (2011, p.16) claim that "teachers cannot discard their influencing role when they undertake research into their teaching", was minimised in this research. The phonics instruction was conducted as an extra class to the participants' routine curriculum and I was not involved in their regular tuition so therefore had minimal influence over the students in this way. The research was not research into the way teachers were instructing the students at the time, apart from the fact that phonics was not part of their instruction. The fact that there were no grades applicable to the phonics instruction meant that the participants' overall grades were not affected in any way. This meant the participants were not likely to feel they had to respond to please me as the teacher/researcher on that basis. Also, their participation was voluntary and they had the option to withdraw at any time which reduced the effect of any power relations further (See 3.8 Ethics below).

To increase the reliability and validity of this research tests were carried out at the beginning and end of the semesters. These tests are discussed below (see data and analyses in Chapter 4). Standardised tests were used to increase the reliability and validity of the data collected. The same pre-tests and post-tests were used so that the data in the statistical analysis were collected from the same material throughout this research. Participants completed questionnaires at the end of the semesters, and although there is always the risk that participants will respond the way they think they should, the data collected from the responses indicate comments are honest. The questionnaires were also not changed over the research period and although the dynamics of the classes were different the questions asked remained the same in an effort to collect comparable sound data.

3.4 The Institution

The institution where this research was carried out is the largest tertiary educational institution in the United Arab Emirates (UAE), for Emiratis only, comprising of seventeen separate campuses. There are both male and female campuses in all of the Emirates with a student base of approximately 23 000 students in total. This research was carried out in the Abu Dhabi campus for male students which was the first campus established in 1988. The colleges have programmes at Diploma, Bachelor and Master level. Mentioned in the mission statement of the institution is the desire to prepare Emiratis for the work place. UAE is one of the most cosmopolitan countries in the world and with English as the lingua franca (see discussion in Chapter 2 on English as the lingua franca) the institution has a foundation programme which is designed to provide Emiratis with the English and mathematical skills they would require both to complete their studies in the institution and in the work place. The students that participated in this research were part of the Foundation Programme which is discussed below.

3.5 The participants

The participants were in the first year of the Foundation Programme. Their ages ranged from 17 to 23. It was their first semester in the institution. The Foundation English Programme has four levels and the students are placed at a level appropriate to their Common Educational Proficiency Assessment (CEPA) score. The participants in this research were Level 1 students with a CEPA score of 150 to 155 which is equivalent to the Common European Framework of Reference for Languages (CEFRL) A1 to A2. During the semester students use the Headway Elementary by Oxford University Press. Their key grammar points are simple present, simple past, basic sentence syntax affirmative, negative and interrogative. They study the first 368 headwords of the Oxford 3000 word list and read ESL Graded Readers at starter and beginner level with 300-500 basic headwords and an average of 800 words per reader. The average student reads 10 000 words in a 16 week semester. The exams used are the Cambridge University (Ucles) KET level listening exams, a writing exam in which students are expected to write between 100 and 150 words and a reading exam of three texts of about 300 words each and students have to answer 25 questions. A spelling component has recently been

added and spelling is taught through Quizlet and Spelling City Web 2.0 tools. Phonics instruction was not part of the curriculum when teaching spelling at the time this research was carried out.

The total number of participants was 111; this number of participants was made up as follows: 22 students in the pilot group, a total of 54 students in the treatment group and 34 students in the comparison group. Unfortunately, because of low attendance the numbers of students completing questionnaires and doing the tests varies. The students that carried out the tests are clearly indicated in tables in Chapter 4. See below for descriptions of all these groups.

The research started with the pilot group, referred to as PG, for a semester. The next semester there was one treatment group (the group receiving instruction in phonics) and one comparison group (the group receiving no instruction in phonics) which I refer to as TG1 and CG1 respectively. The following semester I was allocated two more classes which I refer to as TG2 and CG2 and finally I was allocated two classes in the next semester that I refer to as TG3 and CG3 (all treatment groups received phonics instruction, TG1, TG2 and TG3, and all comparison groups, CG1, CG2 and CG3 did not receive any phonics instruction classes). Unfortunately, my research was brought to a standstill at this stage as a ruling was introduced into the institution that there would be no more teaching allowed on paper and all teaching had to be carried out on tablets. I was advised that there could be no exception made to accommodate my research and realistically working on tablets with spelling and phonics would compromise any results, therefore under the advice of my supervisor I concluded my research. With the situation of my research being brought to an unexpected end I was advised to include the pilot group as part of this thesis research as it was fundamental in the changes I made to the material which is explained below.

The time I had with the participants varied slightly because of events at the institution or changes in exams and revision schedules, but it ranged from eleven to twelve lessons of forty five minutes each. The participants had one phonics instruction session a week and occasionally I was given a double session of two hours.

All students were requested to sign a consent form and all 107 students signed the consent form and none felt the need to withdraw from the research at any stage (See

Appendix 1). I would like to point out at this stage that the consent form was changed for the comparison groups, leaving out the sections referring to phonics instruction as they did not participate in the instruction. The majority of the material used for lessons for the pilot group and the treatment groups was taken from the *Read Write Inc. Get Spelling* series developed by Ruth Miskin details of which are described below.

3.6   Class Material

Although I had to adapt the material because of time constraints and could not use the complete programme, I chose to use material from the *Read Write Inc. Get Spelling* series developed by Ruth Miskin because I was familiar with the programme and both the teachers of the students that would be participating in the research and myself agreed it was suitable for their level of English. Ruth Miskin has been an adviser to the Government in the United Kingdom for many years with regard to literacy. She developed a synthetic phonics-based reading, writing and spelling programme which starts with the forty four phonemes of English and the predominant graphemes for them. Brooks (2007, p.69) describes her programme as "structured, intensive and systematic". He mentions Ruth Miskin as maintaining "… difficulty in reading graphemes means difficulty in reading words, which will mean an inability to read text". She has consulted in phonics and literature in both primary and secondary schools.

The students in the research for this thesis were shown how to convert letters to sounds and to understand the alphabet code. They were given two charts adapted from Ruth Miskin's *Read Write Inc. Spelling Series* Spelling Chart which lists the forty four phonemes of English with the most predominant graphemes (See Appendices 5 and 6). (How the material was used is described in this chapter). Brooks (2007), when discussing pupils with literacy difficulties, recommends *Read Write Inc.* as being effective in phonics instruction. McShane (2005, p.37) states that it is not necessary to develop one's own programme, but it is possible to "take advantage of the phonemic awareness activities that are built into a structured phonics curriculum". I used what I could in the time frame I had with the students.

Having to adapt the material to fit into the time frame was not the only adaptation I had to make. Even though phonics is now receiving renewed attention, there is a

lack of adult material as most of the material is designed primarily for children, which is also a point made by Burton et al. (2010). I adapted the material to suit the participants after several of the participants in the pilot group pointed out that they felt the material was more geared for children. McShane (2005) had a similar experience and claims that some of the material may appear childlike, especially if it is developed with children in mind, but if the instructor is experienced with adult learners it is possible to adapt the material suitably. Fortunately, I was able to adapt all material to be more adult like.

As can be seen in the paragraphs below when discussing the pilot group's tests and the tests given to both the treatment groups and the comparison groups, I made some changes with regard to using more standardised tests with the treatment group and the comparison group as I felt that the tests I composed for the pilot group would not give as reliable and valid data as tests that were standardised.

3.7 Reliability and validity

By using standardised subtests from *Woodcock Reading Mastery Tests* and *Test of Written Spelling TWS-4* the data will be as reliable and valid as is possible. After research was completed with the pilot group it was ascertained that the more standardised tests mentioned above would be more suitable. Two tests were used from the Woodcock Reading Mastery Tests; the Word Attack Test which "requires the subject to read either nonsense words or words with a very low frequency occurrence in the English language" and the Word Identification Test that "requires the subject to identify isolated words that appear in large type on the subject pages in a test book".

In the Word Attack tests the learner is required use the phonological rules of English to read an increasingly difficult series of pseudo-words such as *dee, ap* in the beginning and progressing to pseudo-words such as *cigbet* and *wrey*. In the Word Attack tests the words start with *you and up* and increase in difficulty as the test progresses. The Spelling Tests taken from *Test of Written SpellingTWS-4,* were recommended by the institution where I carried out the research as valid and reliable. The institution's recommendation was considered as well as the history of the test provided in the preface of the manual of *Test of Written Spelling TWS-4* (1999, pp. v-viii). Larsen, Hammill & Moats, the authors, give a review of the test, detail the

characteristics of each edition of the test from 1976 to 1999, provide reviews of each edition of the test made by independent sources and detail the improvements made in each edition. The suggestion I use TSW-4 from the institution and the information provided by the authors was enough for me to consider that TSW-4 would be a valid measure of the students' spelling abilities, however, on the participants' teachers' recommendations only twenty five words were tested. A further description of these tests can be seen below.

McShane (2005, p.25) cites Holt & Van Duzer describing standardised tests as representing "real differences in learners' abilities". McShane (2005) adds that standardised tests are more reliable than tests that are less formal and they provide more accurate results. When speaking about reliability and validity she exemplifies the importance of the researcher having confidence in the assessments reflecting the learners' true abilities. Moreover, she refers to the scoring of the assessments and that it needs to be reliable and how different administrators assessing the data should arrive at the same result. With the above tests there is little room for error with the score sheets and converting raw scores to age equivalents.

The above tests were given to the treatment groups and the comparison groups at the beginning and end of semesters. The hypothesis that the results of this research could possibly improve some areas for the participants involved as far as future phonics instruction being included in their curriculum was integral in me classifying this research as AR. The many characteristics of AR, discussed in this chapter, such as being able to focus on an issue identified by not only myself, but the teachers instructing the participants at the time, and being able to carry out the research *in situ* made it possible for me to collect the information first hand. AR is described by researchers, Cohen et al. (2007; 2011), as being an accurate research method. One of the main strengths contributing to this fact is that the research is carried out in situ and that the learning is done in the workplace and about the workplace. An advantage of doing research in situ is listed by Cohen et al. (ibid.) as the possibility of testing one's practices within a systematic way of learning. They list how requirements of AR are that data are recorded and analysed objectively and reflected upon and participants are given an opportunity to justify their work. Cohen et al. (2011, pp. 348 and 349) reiterate how AR is participatory in that it is characterised not only by its collective participation methodology and its democratic outcomes, but

by the areas of focus which are determined and owned by the participants themselves keeping the focus authentic.

As well as considering reliability and validity when doing research *in situ*, ethical matters have to be considered in the planning of the research as well as during data collection.

3.8 Ethics

As ethical issues can emanate from any area of research I was conscious of ensuring that all ethical principles and practices were considered. Authors point out the areas that need to be addressed at the planning stage of the research being informed consent from the institution initially and then the participants. Consent was given by the Director of the institution after submission of a proposal of the research to be carried out, and then from the Supervisor of the Foundation Programme and finally from the teachers that would be involved. As far as ethics goes, I had to be aware of how sensitive the research is and how the research and reporting the findings might affect the participants. With this in mind care was taken in any areas that might cause concern to the students and the institution and anonymity of participants was critical and therefore all participants were given pseudonyms in this thesis. Participants were made aware from the outset that their identity and confidentiality would be protected as much as was possible (Hopkins 1996; Altrichter et al. 1993; Wallace 1998; Burns 1999; Mills 2003; McNiff & Whitehead 2005; Cohen et al. 2007; Ellis & Moss 2013).

One area of concern was the participants had to be in the class whether they wanted to participate in the research or not, because of the institution's strict absentee rules. This did not constitute a problem as all the participants signed consent forms knowing that although they had to be present in class it was their choice as to whether they wanted to participate in the research (See Appendix 1). The forms were in English and Arabic, but none of the participants wanted to sign the consent form that was in Arabic. Fortunately, all students wanted to participate in the research. Ellis & Moss (2013, p.16), point out how researchers should be sensitive to making all research methods as harmless as possible because classrooms are complicated social settings which was a point taken into consideration at all times.

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Another area of concern was that the comparison groups would not be receiving phonics instruction and I wanted to avoid any negative feelings the students might have. The only way I could compensate this was to give the participants the opportunity, that once the semester was over, they were more than welcome to come and get the material I had used plus the class teachers assured the participants that they would help them if they wanted assistance with the material. The participants were told of the possibility of phonics instruction being included in their curriculum if the research showed it was beneficial. They were told that if it was beneficial, the institution was prepared to looking at officially including a phonics component into the curriculum as mentioned previously. Ellis & Moss (2013, p.13) point out the responsibility researchers have to "re-shape" practices where relevant. Moreover, they state that "… ethical issues go beyond the integrity of research methods or the fidelity of research. They extend to questions of implementation and to questions of 'true for whom and in what circumstances'". Furthermore, they claim that although researchers have no control on whether education managers and other people in control will utilise the findings, at least a "meaningful conversation" can take place with the policy makers, which was what took place. The participants were assured that once the results were analysed a conversation would take place with the educational managers of the institution. I was not made aware of any negative feelings from the participants in the comparison groups during my years of doing the research.

Apart from the comparison groups I had to be conscious that the participants in the treatment groups did not feel as though I was treating them "as passive objects [and instead I should] work with them so that they become increasingly knowledgeable, active, responsible and, therefore, increasingly liberated" Ely (1991, p. 229) citing Friere (1970). As I was teaching the phonics it was possible for me to create rapport with participants and they could ask any questions about the research project and phonics instruction as we had the class time together. The participants were made aware at the outset that should they wish to withdraw from the research project at any time, this was possible, even if they still had to attend the classes and participate in the work. Fortunately, all the students participated in the classroom activities and tests and were happy to be part of the research and according to their comments on the questionnaires given to them at the end of the semester (comments discussed in

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Chapters 4 and 5), the majority of the students felt that there was an advantage to phonics instruction.

3.9   Pilot Group and material used

The pilot group was named as such because when I started the research the institution could only give me one class and therefore, I did not have a comparison group. It was decided, in collaboration with my supervisor, to call this the pilot group and possibly use it to evaluate the material I would use and improve where possible. Unfortunately, the research was brought to an abrupt halt because of the introduction of the *no paper on campus rule* mentioned previously and I was therefore advised by my supervisor to include the findings in the research for this thesis, but the test results are not included in the statistical analyses.   There were twenty two participants in the pilot group, however, as can be seen in the data analyses, because of low attendance not all twenty two students participated in the tests (See table in Appendix 20).

The participants were initially introduced to the idea of phonics instruction when they completed the consent form mentioned above and a questionnaire (See Appendix 2). The questionnaire requested the educational background of the participants as well as the opportunity to explain the research to them and get their perspectives to the advantages or disadvantages to receiving phonics instruction.

To ascertain which level I needed to start my lessons the participants were given a test on short vowel sounds. The words were taken from their word list mentioned above. (Please see Appendices 3 and 4 for the test and list of words respectively). As most of the participants achieved good results in this test, apart from having a warm up exercise at the beginning of phonics lessons practising short vowel sounds, I decided to concentrate on as many grapheme/phoneme correspondences as I had time to teach in the semester.

The test mentioned above was only done by the Pilot Group, not the Treatment Groups nor Comparison Groups, because at the end of the semester with the Pilot Group I decided to change the tests to two of the Woodcock Reading Mastery Tests, (Word Attack and Word Identification), for all treatment and comparison groups, as

mentioned above (Woodcock, 1997). Please see sections 3.11 and 3.12 below where these tests are discussed in more detail.

The participants were given a consonant chart and a vowel chart (See Appendices 5 and 6 respectively) that was adapted from Ruth Miskin's *Read and Write Inc - Get Spelling* series (2008). The charts give examples of words and the letters to phoneme correspondences. Going over the charts gave the participants a further insight to what was ahead with regard to phonics instruction.

3.9.1   The lessons and work sheets

The phonics instruction lessons started with a warm up session using the white board with short words using short vowel sounds with the vowel left out. The lessons were not very long so this warm up session usually lasted about ten minutes or so. For example, I would write the following on the board:

 a e i o u

c_t (cut) c_t (cot) c_t (cat) p_t (pit) p_t (pot) p_t (pet) p_t (pat) I used this one for illustration in this sector because in class we then discussed p_t (put) being a word that did not fit into the pattern and that there were words that they would find like this. This situation came up occasionally with all groups. This was an ideal warm up session and was used in all groups.

The participants would then be handed a worksheet. (Please see Appendices 7 to 19 for examples of worksheets). Each lesson would consist of a warm up session and then working through a worksheet. I will use Work Sheet Number 1 to illustrate a lesson (See Appendix 51 for a lesson plan).

Work sheet number 1, illustrated in Table 1 below uses phoneme and grapheme correspondences of letters <ay> <a-e> <ai> <eigh> and <a>. The part of the lesson using the work sheet would begin with the students writing down, in the spaces provided on the worksheet, words I would say using the grapheme and phoneme correspondences we were covering that lesson. As a class activity all words would be checked and written on the spaces provided correctly. Then I would go through the words that are listed in the columns under the graphemes with the students. These worksheets were used with all groups following the semester with the pilot group.

Table 1 Example taken from Work Sheet 1 showing grapheme and sound correspondence.

ay		a-e	ai		eigh		a	
day		made	wait		eight		cable	
way		ate	paid		weight		table	
away		make	pain		weigh		able	
stray		take	train				apron	
delay		came	fail					
today		gave	afraid					
Sunday		save	complain					
holiday		brave	explain					
birthday		date						
		cage						
		escape						
		mistake						

As a class activity the participants would then think of other words that they could add in the respective columns.

In most of the worksheets there would then be a class discussion of some words that sounded the same, but had different meanings, such as ate and eight or wait and weight in the above work sheet.

Sometimes as in worksheet number 1 there would be an activity identifying words that do not fit into sound patterns – the words on worksheet number 1 were *would*, *could*, *should* and then *shoulder*. This was to highlight the situation to the participants that some words had to be learned.

As mentioned previously, students at this institution have 16 weeks of tuition. With exams and commitments to institutional activities I had 12 lessons with the pilot group. This meant that allowing time for the questionnaires, consent forms completion and tests, I was only able to cover the first five worksheets to a level that I felt the participants could be tested. I wanted to test the participants twice to

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ascertain if there was any improvement in their skills. Although further worksheets were covered in lessons there were no tests done on them.

These worksheets were used for the pilot group, treatment group and comparison group.

3.9.2 Grapheme/Phoneme Matching Tests

The tests on the first five work sheets were compiled in a similar style to the worksheets with matching graphemes put in one column. There were two tests given on the same grapheme/phoneme correspondences using different words. (See Appendices 20 and 21 for Test 1 and Test 2 respectively). These tests were given to motivate the students to learn the grapheme/phoneme correspondences. They were administered weeks apart giving the students time to become familiar with the grapheme/phoneme correspondences. The words given in these tests (the first and second) have been inserted in the Appendices– the participants were given a blank sheet as illustrated in Table 2 below. I said the words (twenty five words), shown in Table 3 (Test 1), twice and the students had to insert the word in the column under the corresponding group of graphemes and write the word using the spelling. Participants were given two marks for each word; one mark for putting the word under the correct set of grapheme/phoneme correspondences column and one mark for using the correct spelling. See example below.

Table 2 Test 1. Grapheme/phoneme matching test.

ay	ee	igh	ow	oo
a-e	ea	i-e	o-e	u-e
ai	e	y	oa	ew
eigh	y	ie	o	ue
a		i		oe

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Table 3 Words used in Test 1.

stray	indeed	fight	blow	room
escape	happy	mice	hope	cute
explain	be	why	goat	few
weight	leave	die	most	rescue
apron	between	mind	moan	shoe

The tests shown in Appendices 20 and 21 (Grapheme and phoneme tests) are the only tests that were given to the pilot group and the treatment groups that are the same. These tests, although discussed in Chapter 4, were not included in the final analyses or the statistical analysis as these were not standardised tests. These tests were to motivate the students to study and as enforcement in identifying grapheme and phoneme correspondences.

The tests given to the treatment groups and the comparison groups at the beginning of the semesters and the end of the semesters will be discussed in the following paragraphs.

The tests, discussed below, were the final tests given only to the pilot group. For the treatment group and the comparison group tests were changed as is indicated in the paragraphs below.

The pilot group were given three final tests. These tests are described below and analysed in Chapter 4. The reason the pilot group was brought in as part of the main study is because this study was brought to an abrupt end because of the introduction of the use of tablets only on campus, and on the advice of my supervisor as mentioned previously. Although the results contribute to this research they are not included in the data used for the final analyses, including the statistical analysis as mentioned above. A test taken from McGuinness (1999, p. 307) known as the Code Knowledge Test and Key. The Code Cue Card was taken from McGuinness (ibid., p. 308) (See Appendices 25 and 26). For this test the participant has to give the

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examiner the phoneme the letter stands for. The second final test was taken from McGinness (ibid., p. 305) (See Appendix 27); this was a phoneme segmentation test; I said the word and the participant had to write down the sounds he heard. The third final test, also taken from McGinness (ibid. p.303), consisted of five nonsense words. (See Appendix 28) The aim was to see if the participant decoded the words. These tests were not used for the treatment groups or the comparison groups as I used standardised tests as mentioned above. Changes made to teaching material and tests are discussed in 3.10, 3.10.1 and 3.10.2 below.

3.9.3 Questionnaire at the end of the semester

At the end of the semester the pilot group filled in a questionnaire (See Appendix 29) The aim of this questionnaire was to get feedback from the participants as to whether they themselves felt they had become more phonemically aware and to get their perspective on the value of phonics instruction. The feedback on this questionnaire can be seen in Chapter 4.

3.10 Changes made to teaching material and tests

The end of the semester with the pilot group was a starting point for changes that I felt necessary for various reasons explained below. The participants themselves were helpful in giving feedback and the experience with college hours and activities revealed the limited time I had with the participants and the reality of the amount of work I would be able to cover.

3.10.1 Changes to teaching material

The participants pointed out that they found the material I gave them more suitable for children. I therefore amended all the worksheets so that they no longer contained pictures, as I mentioned previously. Also, I adopted McGuinness' idea of the "English Spelling Code" and explained to the participants they would be decoding the sounds and matching them to letters (1999, p.101). This concept seemed to change the participants' perspectives with regard to the phonics instruction being immature and that it was now more of a challenge to decipher the code.

3.10.2 Changes made to tests

Tests were done at the beginning of the semester on the treatment groups and the comparison groups. I decided to change the tests from the tests done by the pilot

group because the tests in Woodcock Reading Mastery Tests are standardised tests as mentioned above and had been used previously by a researcher in the institution where I carried out this research and she recommended them to enhance reliability and validity in this research, as mentioned previously. Woodcock (1997, pp. 95 – 103) discusses the standardisation and development of the tests which endorsed the recommendation further. The Woodcock Reading Mastery Tests-Revised (WRMT-R), as described in the test books' introduction, is described as "a comprehensive set of individually administered tests of reading". There are four reading tests in Form G and H of the test book and out of the four it was recommended I did the Word Identification and Word Attack tests. The other two reading tests are Word Comprehension and Passage Comprehension that test the subject's reading vocabulary at various cognitive processing levels and the subject's ability to study a short passage respectively. Both topics are outside the scope of this research and bearing in mind the time frame I had with the students it was realistic to only do the tests mentioned below. These reasons further clarified the justification in choosing the two tests recommended – the Word Attack Test and the Word Identification Test which are described below.

3.11 The Word Attack Test

The Word Attack Test tested the students' ability to read nonsense words and low frequency words. A description of this test from the Woodcock Reading Mastery Test Examiner's Manual (1997, p. 6) states:

> The test measures the subject's ability to apply phonic and structural analysis skills in order to pronounce words with which he or she may be unfamiliar. Nonsense words have been chosen as the main stimuli for this test because the task faced by a subject encountering a nonsense word closely simulates the real-life task of a person encountering an unknown – though real – word. A correct response to a real word would not provide evidence that a subject has applied word attack skills to that word, only that he or she has identified it.

> The items in each [test] were selected so that almost all phonemes in the English language are represented in at least one of their major spelling patterns. The test begins with simple consonant-vowel combinations and

concludes with multisyllabic nonsense words, to determine a subject's ability to apply structural analysis skills.

Each test contains 45 items in order of difficulty. For these tests, it is a rule of the test to continue until the student gets six incorrect in a row and then stop the test or continue till the end of the test.

The Word Attack test starts with a sample page containing two items set out as in the sample below:

Sample A. tat
Sample B. op

The examiner would say, *I want you to read some words that are not real words, I want you to tell me how they sound.* The examiner would point to the first item and say, *How does this word sound?* If the subject responds incorrectly the examiner would point to the word and say *tat* and then ask the subject to try again. Then the examiner would point to *op* and go through the same process. Once the subject understands the procedure the test would begin. The examiner would not repeat any further items. See Appendix 30 illustrating the words used in the Word Attack Test done at the beginning of the semester on the treatment groups and comparison groups and Appendix 31 giving the words used at the end of the semester in the Word Attack Test.

The Word Attack Tests were done by the treatment group and the comparison group not the pilot group.

3.12 The Word Identification Test

In these tests the students have to identify isolated words. The Woodcock Reading Mastery Test Examiner's Manual (1997, p. 6) states:

> As subjects proceed through the items, they encounter words that appear less and less frequently in written English. For an answer to be scored correct, the subject must produce a natural reading of the word within about five seconds.

It is not assumed that the subject necessarily knows the meaning of any word correctly identified.

Each test contains 106 words arranged in order of difficulty. Here the same rule was implemented, that after six words were incorrectly identified the test was terminated. The test would begin with a sample word which the examiner would point to and say, *What is this word?* The first word on one test is *is* and on the other test *go.* If the subject does not get the word correct the first score would be zero – the examiner would then say the word and ask the subject to repeat it. The test would then resume, but no further words would be repeated by the examiner. (See Appendices 32 and 33 illustrating the words used in the Word Identification tests done at the beginning of the semester and the end of the semester respectively).

The word identification tests were done by the treatment group and the comparison group, but not the pilot group.

3.13 Tests of Written Spelling

Two spelling tests taken from *Test of Written Spelling* (1999) by Larson, Hammill & Moats were recommended by the same teacher that recommended the Woodcock tests. One test was given at the beginning of the semester (See Appendix 34) and the other at the end of the semester (See Appendix 35). Although there are 50 words in each test it was recommended, because of the level of the students, that the first 25 be used for each test.

After reading the chapters on reliability and validity (ibid, pp. 27 – 43) I was satisfied that these tests would be more valid and reliable than using the words I had used for the spelling test with the pilot group.

These spelling tests were done by the treatment group and the comparison group, not the pilot group as mention above.

3.14 Grapheme and Phoneme Tests

Apart from the above tests I realised that because of time constraints I would not be able to test the students on all the grapheme and phoneme correspondences I would be covering. Therefore, I chose the same tests I used on the pilot group discussed above. The first test is illustrated in Table 2 (Test Template) and Table 3 (Words

used in Test) and both the first and the second tests can be seen in Appendices 21 and 22 respectively. These tests were to cover work I had done during the classes and to record any possible changes in the participants' ability to match corresponding graphemes and phonemes. These tests were used as a motivational tool to encourage participants to learn the graphem/phoneme correspondences, however, these tests were not used in the statistical analysis.

3.15 Treatment Group

The treatment group was made up of three treatment groups that were taught over three semesters. In Chapter 4 for the sake of analysis the groups have been kept in their separate groups apart from the statistical analysis where for the sake of accuracy the numbers were grouped into one treatment group. Treatment Group 1 (TG1) comprised of 20 students, Treatment Group 2 (TG2) comprised of 18 students and Treatment Group 3 (TG3) comprised of 16 students – the Treatment Group was therefore a total of 54 students. I will describe the methodology below for the treatment group as one group and will highlight any differences that occurred between the groups where necessary.

The semester started with the participants completing the consent form and the questionnaire (See Appendices 1 and 2 respectively). It is the same consent form and questionnaire the pilot group completed. As with the pilot group, the questionnaire requested the educational background of the participants as well as the opportunity to explain the research to them and get their perspectives to the advantages or disadvantages to receiving phonics instruction.

The participants then did the first Woodcock Reading Mastery tests, the Word Attack and Word Identification Tests, described above in sections 3.11 and 3.12 respectively. They also completed the spelling test described above in section 3.13.

Lessons started as they did with the pilot group and work covered is the same as discussed in Section 3.9 above. The phoneme and grapheme tests given to the pilot group, described in Section 3.9.2, were also administered to the treatment group. The only difference in these tests was that some of the treatment group participants, because of circumstances out of my control, were not able to do both of the tests as discussed in Chapter 4.

The semester ended with the participants doing the second Woodcock Reading Mastery tests and the second spelling test discussed in 3.11.; 3.12. and 3.13, respectively. The participants in all treatment groups also completed a questionnaire for feedback on the instruction of phonics and their perspective as to how they thought the instruction had or had not helped them (See Appendix 29).

3.16 Comparison Group

The comparison group consisted of three groups which I have referred to as Comparison Group 1 (CG1) – 11 students, Comparison Group 2 (CG2) – 12 students and Comparison Group 3 (CG3) – 11 students, making the total students in the Comparison Group 34 students. These groups' data is also analysed in groups in Chapter 4 and then in the statistics section grouped together as the Comparison Group.

The comparison group completed consent letters and the same questionnaire as the pilot group and treatment group. The questionnaire requested the educational background of the participants as well as the opportunity to explain the research to them and get their perspectives to the advantages or disadvantages to receiving phonics instruction as in the pilot group and the treatment group.

At the beginning of the semesters the comparison group completed the Woodcock Reading Mastery Tests described in sections 3.11 and 3.12, the same as the treatment group. They also completed the spelling test described above in section 3.13. This group had no phonics instruction from the researcher therefore were not required to complete the questionnaire at the end of the semester as mentioned below.

At the end of the semester the comparison group completed the same Woodcock Reading Mastery Tests – the Word Attack and Word Identification Tests (See Appendices 31 and 33) as the treatment group as well as the spelling test (See Appendix 35).

Data was collected from the results of all the tests done by all groups and is analysed in Chapter 4.

The comparison group did not complete a questionnaire at the end of the semester as the questionnaire was related to the phonics instruction given to the treatment group.

3.17 Data Collection

Data was collected from the questionnaires done at the beginning of the semesters and the end of the semesters in the treatment and pilot group, although the pilot group's data is analysed separately and not included in the statistical analysis. The comparison group completed a questionnaire at the beginning of the semester, but was not required to complete questionnaires at the end of the semester as there was no feedback required because they did not receive phonics instruction as mentioned above.

The data collected from the questionnaires at the beginning of the semester was to ascertain the background of the students and determine the groups were as homogenous as possible in research of this nature to ensure a valid analysis. At the end of the semester the pilot and treatment groups gave responses concerning the instruction received and their perspective with regard to phonics instruction. The qualitative data is presented in Chapter 4. As Strauss & Corbin (1988), cited in Gray (2004, p. 319), state, the data "speak for themselves".

The data collected from the grapheme and phoneme tests were scored on two bases. The first being the success in matching the phoneme to the grapheme column on the test sheet and secondly selecting the correct grapheme, for example, if the student selected the column with the graphemes <ay>; <a-e>; <ai>; <eigh> a for the word *eight* the student would receive one mark for choosing the correct set of graphemes and if the student then selected the correct grapheme <eigh> he would then get another mark. These tests were merely for reinforcement and motivation to learn grapheme/phoneme correspondences.

The Word Attack and Word Identification tests and results were conducted as instructed in the examiner's manual. The student reads the words out of a booklet and the answers are recorded on a record sheet. The word is marked either as said correctly or not. These answers were tallied and the grade and age equivalents were

taken from the Standard Errors of Measurement (SEM) tables in the examiner's manual.

The spelling tests were taken from the examiner's manual of Larsen, Hammill & Moats 1999, pp. 58 and 59 and the results were converted to raw scores and spelling ages and grade equivalents according to the table given in the manual (p. 56).

3.18 Analysis of data

In Chapter 4 the analyses reported initially take one class at a time discussing trends. The statistical analysis follows to report a more valid and reliable result as it identifies trends and accommodates the fluctuating numbers of the classes. The statistical analysis made it possible to compare the trends of a smaller comparison group to the larger treatment group. This analysis also accommodated the outliers in the stronger comparison group enabling a more accurate and reliable outcome. The tests used were done in Excel and both the T test and the CHISQ.TEST were done to determine whether there was a significant relationship between the two variables.

4   Chapter 4 – Analysis of Data

This chapter discusses the analysis of the results of tests done and at the beginning, during and end of semesters and the responses to questionnaires completed at the beginning and end of the semesters with the pilot group, treatment groups and with regard to the comparison groups only questionnaires completed at the beginning of the semester as the questionnaires at the end of the semesters concerned the phonics instruction which they did not receive. Each group's test results will be analysed individually, initially dealing with the tests at the beginning of the semester and then the tests at the end of the semester. There is also an analysis of phoneme and grapheme tests done during the semester. At the end of each group's test analyses, the responses of the questionnaires are analysed.

A summary is given at the end of the discussion on the Pilot Group as to how I thought I should continue with the research for this thesis and where I should make some changes based on my findings from the work with the pilot group and collaboration with the students' class teachers as well as the students themselves. The pilot group was instrumental in giving me the basis of the methodology I should use in this research. The number of students attending the class varied during the semester as can be seen in the test results. Students were moved to other classes and some left the institution.

There are analyses of the tests done at the beginning and end of the semesters looking at the combined treatment groups' results and those of the comparison groups. The pilot group's results have not been included in the analysis as the tests were different and therefore not suitable for making a reliable and viable comparison on all of the findings.

This chapter ends with the statistical analyses of the data collected from the tests done by the treatment group and the comparison group.

In an effort to protect the students' identities and for the sake of clarity when comparing certain students I have given the students pseudonyms as follows:

The pilot group (PG-S1 to PG-S22)

Treatment group-1 (TG1-S1 to TG1-S20)

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Treatment group-2 (TG2-S1 to TG2-S18)

Treatment group-3 (TG3-S1 to TG3-S16)

Comparison group-1 (CG1-S1 to CG1-S11)

Comparison group-2 (CG2-S1 to CG2-S12)

Comparison group-3 (CG3-S1 to CG3-S11)

4.1   Analysis of data collected from pilot group

Tests done were as follows:

A test was given at the beginning of the semester on short vowel sounds (See Appendix 3 for test and for the Answer sheet to this test see Appendix 4).   The nineteen students were tested on twenty words taken from their word list that was given to them by the institute. The words were typed on sheets with the spaces left where the letters matching the short vowel sounds should go.   I read the words and the students were required to fill in the missing letters.

4.1.1   Analysis of results of tests on short vowel sounds

Results (See Appendix 20) revealed that the majority (over 50%) of the students in this group were familiar the short vowel sounds. The results of the tests show that only three students' marks were below fifty per cent and six of the students received ninety per cent and above. The rest of the students ranged between fifty five and eighty five per cent.

It was interesting to note that the majority of students got /ɒ/ and /æ/correct and that most errors occurred with /e/ and /ɪ/ with /e/ showing the highest percentage of errors.

4.1.2   Analyses of results on grapheme and phoneme matching

The next two tests were on graphemes and phonemes with the same graphemes and phonemes being tested (See Appendices 21 and 22 for the two tests – sample words given for these tests have been inserted on the test sheets). The students were given a test sheet with five columns; in each column were graphemes matching five phonemes and the students had to write the words I said into the correct column and use the correct grapheme and spelling for full marks. The graphemes matched

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the phonemes /eɪ/; /iː/; /aɪ/; /əʊ/; and /uː/.   If a student put the word under the correct grapheme column, it was taken he had recognised the phoneme/ grapheme match and he got a mark even if the spelling was incorrect, whereas, if he spelt the word correctly, using the correct grapheme, then he received two marks. There were twenty-five words for fifty marks. The tests were given six weeks apart after weekly revision on the grapheme/phoneme match.

Unfortunately, there were quite a few absences in this group and therefore not all the students' results could be compared. Out of the twenty-two students in the group it was possible to compare the marks of thirteen students as they were present for both tests. Initially I will discuss the phoneme recognition part of the tests (see Appendix 23 illustrating the marks).

4.1.3 Analysis of first test -Phoneme matching section

Sixteen students did the first test. Seven of these students got above fifty per cent, and one student (Student PGS-13) got 76%, four students in the sixty per cent range and two in the fifty per cent range. Out of the nine students that received below 50%, five students were between thirty and fifty per cent and the other four students obtained marks in the twenty per cent range.

4.1.4 Analysis of the second test and comparison to first test- Phoneme matching section

Fourteen students participated in the phoneme/grapheme test two; however, one of the students had not done the first test so there are no comparable marks. Nine students out of the thirteen students showed an improvement in recognising phonemes. PGS-17 made a significant improvement from 28% to 52% and Student PGS-22 from 28% to 40%. Even though students showed an improvement only nine students obtained above 50%. Six students were in the fifty per cent range, two students in the sixty per cent range and PGS-20 achieved 76% with an improvement of 11%. This was not the same student that received 76% in the first test, in fact that particular student, (PGS-13), dropped from 76% to 52% in the second test. Nine students increased their marks with improvements ranging from 4% to 34%. Four students dropped in marks; two of the students dropped by 4%, one by 14% and the significant drop was 24% by PGS-13 who obtained 76% in the first test. There were no marks in the second test below 40%. The class average in the first test was 34%

and in the second test a slight improvement of 1% was shown (35%). The results, on a whole, were encouraging as they indicated that phonics instruction could possibly increase phoneme awareness.

4.1.5   Analysis of the first test - Grapheme matching section

The grapheme section of the tests showed significantly lower results with the highest mark in the first test being 40% (See Appendix 21 for results). In the first grapheme test two students received 32% each, seven students were in the 20% range and six received marks between 4% and 16%.

4.1.6   Analysis of the second test and comparison to first test– Grapheme matching section

Out of the fourteen students who wrote the second test only one student received above fifty per cent with an improvement of 12%, from 40% to 52% (PGS-16). Nine of the other students showed an increase in their marks (4% increase by PGSS-2 and 15 from 32% to 36% and 16% to 20% respectively). There were two increases in marks by 8% by PGS-4 and PGS-8 to 20% and 24% respectively. Significant increases of 12% and 16% by PGSS-16 and 19 brought their marks up to 52% and 40% respectively. PGS-18 increased his marks by 20%, thereby bringing his grade up to 44%. The highest increase in grades was 24% by PGSS-17 and 20 bringing their grades up to 28% and 36% respectively. Two of the students received the same grades for the first and second tests of 24% and 32%. Two students dropped by 4% and one of the students did not do the first test so there is no possible comparison. The group average on the grapheme tests increased from 15% to 19%. These marks could indicate that with phonics instruction students learn to match phonemes to graphemes.

Although nine students showed improvement in choosing the correct grapheme and nine in choosing the correct phoneme, they were not the same students that improved in both areas. Two students showed an improvement in recognising phonemes, but did not improve in selecting the correct grapheme and two students improved in choosing the correct grapheme, but did not show an improvement in phoneme use. Seven students showed improvement on both grapheme and phoneme second tests. PGS-8 improved by 8% on both the phoneme and grapheme test bringing his marks up to 24% and 56% respectively and PGS-16 improved his

mark on both phoneme and grapheme use by 12% bringing his grades up to 52% and 48% respectively. PGS-4 increased his grade on the phoneme test by 16%, therefore his grade went from 40% to 56% and his grapheme test by 8% which improved his grade from 12% to 20%. Another student who did better on the phoneme test (PGS-17) improved his phoneme test grade by 34%, so his grade went from 28% to 52% and his grapheme test mark improved by 24%, from a low mark of 4% to 28%. The next three students were stronger on their second grapheme tests and they showed improvement in their phoneme tests as well. PGS-18 increased his grade on the phoneme second test by 8%, bringing his mark up to 60% and the grapheme test by 20%, increasing his mark on this test from 24% to 44%. PGS-19 showed an improvement of 4% on his phoneme test increasing his mark to 52% and the mark for his grapheme test increased by 16% bringing his mark to 40%. Finally, PGS-20 improved on the phoneme test by 11% bringing his mark up to 76% and although his mark for the grapheme test is significantly lower than his mark for the phoneme test it increased by 24% from 12% to 36%.

From the first test results it can be seen that the phoneme which the students had the least difficulty with was /uː/ followed closely by /əʊ/. The phoneme /iː/ was third, then /eɪ/ and lastly /aɪ/. On the second test the order of the phonemes changed with the students finding /iː/ the least difficult followed closely by /əʊ/.with /uː/ in third place, then /aɪ/ and finally /eɪ/.

As I managed to collect this data from the phoneme and grapheme tests, I decided that these particular tests could be used to collect data in this area and that I would use them in following semesters.

4.1.7 Final three tests given at the end of the semester

Unfortunately, for the final three tests, in the last week of the semester of this pilot group, the attendance was extremely poor. Only six students were present for the tests.

The first test was the grapheme/phoneme test taken from McGuinness 1999, pp. 307 & 308. (See Appendix 25 for the Code Knowledge Cue Card that the student sees and Appendix 26 for the Code Knowledge Test and Key – Answer Sheet). The student is given the cue card and he has to give the examiner the sound the letter stands for. If the student offers the letter name it is marked incorrect. The total

correct multiplied by two is the percentage of the code knowledge the student has at the time of the test.

The examiner would start the test saying, "If you saw this in a word, what sound would you say?" Letter names are not accepted as correct, as stated above, and if a student says a letter name the examiner would say "That's a letter, I want to know what sound it stands for". Letter names would be marked incorrect on the examiner's answer sheet.

The second test in this final stage (See Appendix 27) was a phoneme segmentation test taken from McGuinness 1999, p. 305. Ten words are said clearly and slowly to the student and he has to repeat the sounds he has heard without using the letter names. There are forty-two sounds in total. The interpretation of scores according to McGuinness (1997, p. 305), is that a student who gets above 95% would be considered good, and below 95% would be considered low moderate, however, below 85% would be considered poor.

The final test consisted of five nonsense words taken from McGuinness (1999, p. 303), and the students had to read the words (See Appendix 28). The examiner was to see if the students decoded the words using the relevant phonemes. Although there are forty words on the test in McGuinness, I only took five words because of time constraints. The test was to give me information about whether the students were able to decode the words.

The results of these tests are shown in the table below:

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Table 4 Students' grades for final three tests:

Test 1 Phoneme/Grapheme Test

Test 2 Phoneme Segmentation Test

Test 3 Decoding Nonsense Words Test

Student	Test 1	Test 2	Test 3
6	48%	5%	60%
11	36%	24%	100%
13	40%	0%	100%
16	50%	55%	60%
17	48%	48%	80%
18	38%	29%	60%

4.1.8 Analysis of results of first test (Phoneme/Grapheme)

According to McGuinness (1999, p. 307), a result of 60-100% for a six year old is considered good, 50-60% would be low moderate and below 50% poor. Adults should be graded on eight year old values, which are 80-100% good, 70-80% low moderate and below 70% poor. It can be seen from the test results that excluding PGS-16, all other students would be considered poor on the six year old standards, and all students would be considered poor on adult/eight-year-old standards.

4.1.9 Analysis of second test (Phoneme segmentation test)

According to McGuinness (1999, p. 305), a result of 95% and above would be considered good, less than 95% would be considered low moderate and less than 86% poor. The students in this test all used letter names more than grapheme/phoneme matching sounds or codes as McGuinness (1999) calls them, and therefore the results were extremely low for all students with the highest percentage being PGS-16 with 55% and the lowest PGS-13 with 0%. It was interesting to note that PGS-16 showed an improvement on both graphemes and phonemes and scored the highest in this test. PGS-13 received the same percentage in both grapheme tests and dropped from 76% in the first phoneme test to 52% in the second, but received 0% in this test. PGS-17 is the student that made

the significant improvement from 4% to 28% on the graphemes test and on the phonemes test showed progress by moving from 28% to 52%, but on this test, although the second highest at 48%, would still be considered poor by McGuiness' standards. PGS-18 also showed improvement in both phoneme and grapheme earlier tests with final percentages of 60% and 44% respectively, but received 29% for this test. These results indicate that it was extremely difficult for the students to identify the graphemes and say the sounds as they heard them; they spelt the majority of the words using the letter names.

4.1.10 Analysis of third test (Decoding nonsense words)

Because of time constraints I only took five of the forty words for this test choosing words that increase in length to get information on whether the students had any idea on how to decode the words. I was expecting the twenty two students to do these tests and therefore would not have had time to do the complete the test. All of the students attempted decoding skills with PGSS-11 and 13 managing to decode all the words.

The analyses on all the tests above gave me helpful data on what areas I should concentrate on with the students in the future. As stated by McGuinness (1999 p. 298), the tests given in her book are not standardised tests even though they were used in research and in the reading clinic, so I decided I would use different tests to collect the data for classes in the future. Details of the tests to be used in the future are given at the end of the discussion on the pilot group

4.1.11 A discussion, as well as a comparison, of questionnaires from the beginning and end of semester. Pilot Group.

Unfortunately, only ten of the students out of a class of twenty two were present to complete the questionnaire at the end of the semester. The college forgot to inform me that classes in the final week were not mandatory and this is something I must remember for following semesters.

As the semester progressed I realised that it was necessary to change the wording on the first questionnaire to 'matching sounds of English to letters' rather than 'knowing the sounds of the letters'.

Changing this outlook in classes made a significant difference to the motivation of the students. A few students had told me they felt like little children when receiving instruction because of the childlike illustrations and reference to sounds of letters, however, when I changed the presentation of the worksheets and put the prospect of phonemes being a code and matching the sounds to the letters was like deciphering a code, the motivation and application to the work of the students changed. McGuinness (1999, p. 72) posits that "[t]he letters are the code" and that the sounds speech makes are the "basis for the code". This concept encouraged me to change my approach which was a positive move considering the response from the students.

In response to the questionnaire at the end of the semester around fifty percent of the students responded that they could match sounds to individual letters and groups of letters. The greater number indicated that when reading they sometimes guess the word and only sometimes try to work it out matching sounds to letters, with two students responding positively to using the method of matching sounds to letters. However, when doing written assignments the majority stated that they tried to match the sounds to the letters. Only two out of the ten students, in response to the questionnaire at the end of the semester, said they knew all of the sounds we had covered during the semester. Furthermore, only fifty percent of the ten respondents stated they had taken time to learn the sound and letter combinations. They all indicated they wanted phoneme awareness instruction to continue the following semester with comments stating that it had helped them with spelling, in exams and in reading and made their language stronger. All but one student responded that they found it difficult to break up a word into sounds.

Just above fifty per cent of the respondents believe that one class a week is enough and all of the students indicated they would like more phonics instruction lessons and would recommend phoneme awareness instruction to their peers.

It is difficult to compare the questionnaires as the questionnaire at the beginning of the semester had eighteen respondents and at the end of the semester only ten students. The first questionnaire was basically to get background information about the students and of their education. Only two of the eighteen students indicated knowledge of phoneme awareness at the beginning of the semester and respondents

to the questionnaire at the end of the semester, even though there were only ten of them, all stated that the phonics instruction had helped them to match sounds to letters and although fifty per cent of them indicated that they had difficulty in matching the sounds to letters, they all indicated they knew more sound to letter combinations than they did before the instruction on phoneme awareness. Although it would have been advantageous to have a higher number of respondents to the final questionnaire the responses indicate a possible positive result to phoneme awareness instruction. Care will be taken in the next semester to complete the final questionnaire before the final week when attendance is not mandatory.

4.1.12 Notes on problems I have experienced in the pilot group and possible solutions:

Attendance – when I spoke to the supervisor she stated that this had been a problem with this class in all their lessons.

Material – as stated previously, some students felt that the illustrations were more aimed at children – I have changed the material for the next research class by taking out the pictures and making the presentation more formal and will continue with the approach of decoding the sounds and matching them to letters as proposed by McGuinness (1999).

Time restrictions – the students themselves stated that they would like more phoneme awareness classes and as the time I spent with the class was one lesson of forty five minutes a week perhaps with the lower level of students more lessons per week would be suitable, however, I doubt possible.

I took note that, because of time constraints, I would have to select certain phonics and graphemes as it was not possible to cover all I had hoped.

Data collection – tests at the beginning of the semester and the end of the semester must be changed in an endeavour to make data more valid and reliable. I will now use two of the *Woodcock Reading Mastery Tests,* Woodcock (1997), – (Word Identification which requires the student to identify isolated words and Word Attack which measures the student's ability to apply phonic and structural analysis skills to pronouncing words that are not recognisable by sight) as well as spelling tests from *Test of Written Spelling* –Larson, Hammill, Moats (1999). These tests will be carried out at the beginning and end of semester. During the semester I will be carrying out

as many tests on phonics and graphemes as possible, taking time constraints and instruction time into consideration.

Two tests from Woodcock (1997) were carried out at the beginning and end of the semester. Word Attack and Word Identification were both given at the beginning and end of the semester (See Appendices 30 and 31 for the 1st and 2nd Word Attack tests respectively and 32 and 33 for the 1st and 2nd Word Identification Tests – these are examples of the marking sheets including the words used in the tests). Also, twenty-five words were taken from Spelling Tests Form A and B from Larsen et al. (1999, pp. 58 & 59) (See Appendices 34 and 35 for the first and second spelling tests respectively).

The above standardised tests will be more suitable for assessment purposes than the ones used with the pilot group. McShane (2005, p.25) cites Holt and Van Duzer who describe standardised tests as being "created according to explicit specifications with test items selected for difficulty and discrimination power. They are administered and scored following standard procedures, so that variations in scores may be assumed to represent real differences in learners' abilities, not different administrators or testing conditions".

4.2 A description of tests given to treatment/comparison groups at the beginning and end of semester

The Word Attack tests should tell the examiner how the student decodes words that are unfamiliar without aid from context clues. Samples of words are: tat, op, ree, ip, din increasing in difficulty.

The Word Identification tests require the student to read a list of words. Some of the words are phonically regular; however, some words will test the student's sight-word vocabulary. When the student has to read unfamiliar words it might be possible to see if the student utilises any phonic skills.

The third test is a spelling test (See Appendices 34 and 35 for 1st and 2nd tests) from Larsen et al. (1999), to ascertain, as much as possible considering various variables,

if there would be an improvement in spelling after phoneme and grapheme instruction.

4.3   Analyses of Tests and Questionnaires on Treatment Group 1

There were twenty students in Treatment Group 1. Two students were absent for the Word Attack, Word Identification and spelling tests.

4.3.1   Analysis of Word Attack Test (Beginning of Semester) – Treatment Group 1.

The results of the first Word Attack Test (See Appendix 36 for schedule of results on all three tests done at the beginning of the semester – Word Attack – Word Identification – Spelling) indicated that the students in Treatment Group 1 were at an age equivalent from five years to eight years one month. This estimation is taken from the Table of Scores in Woodcock (1997, p. 149 Form H test). Of the forty-five total words the highest raw score was nineteen words (42% – TG1-S8). The next highest score was one student with a raw score of sixteen (36% - TG1-S5), followed by two students with raw scores of fifteen (33% - TG1-SS 1 and 9) and the other student above a raw score of nine was TG1-S3 with a raw score of 11 (24%). The other students' scores ranged from a raw score of zero to nine (0% to 20%).

4.3.2   Analysis of Word Identification Test (Beginning of Semester) – Treatment Group 1.

The results of the Word Identification test were higher than the Word Attack test and indicated that the students were at an age equivalent of six years six months to eight years 6 months. This estimation is taken from the Table of Scores in Woodcock (1997, p. 148 Form H test). The highest raw score in this test was fifty four (51%) – TG1-S5, who was one of the highest scorers in the Word Attack test discussed above. The student with the second highest raw score of forty seven (44%) was TG1-S7 who had a low raw score of six (13%) in the Word Attack test discussed above. Five of the highest scorers, ranging from thirty seven (35% - TG1-S9) to fifty four (51% - TG1-S5), also were the highest scorers in the Word Attack test. The lowest score was TG1-S13 with a raw score of five (5%) and this is the student that had 0% in the Word Attack test. The second lowest raw score was 25 (24% - TG1-S2) and the balance of the raw scores ranged from twenty five (24%) to thirty seven (35%). Results show that the students probably found the Word Identification test

easier than the Word Attack test with class averages of 17% for the Word Attack test and 31% for the Word Identification test showing quite a significant difference. Results also showed that not all students that scored the highest in the Word Identification test were amongst the highest scorers in the Word Attack test.

4.3.3   Analysis of Spelling Test (Beginning of Semester) – Treatment Group 1.

The first spelling test taken from Form A in Larsen et al. (1999, p. 58) contains fifty words, but on the advice of the class teachers because of the increase in the difficulty of the words only the first twenty-five were selected. The highest raw score was seven (28% - TG1-S3) which according to the Scoring Table in Larsen et al. (1999, p. 56) put this student at a spelling age of six years six months. TG1-S7 and TG1-S19 both had raw scores of six (24%). Raw scores then ranged from four students with one (4%), five with a raw score of three (12%), four with a raw score of four (16%) and one student with a raw score of 5 (20%). From Larsen et al.'s (1999, p. 56) Table C.1 which converts raw scores from these tests to spelling age equivalents, these students are in the below six years of age, which is the minimum age listed, to a maximum of six and a half years.

4.3.4   Summary of findings of Treatment Class 1 in the above three tests.

Raw scores in all the tests are relatively low and students are significantly low in the age equivalent rates given by Woodcock (1997) and Larsen et al. (1999). From the findings it appears that five of the students, TG1-SS 1, 3, 5, 8 and 9 have raw scores in all three tests in the top five places. Apart from one student (TG1-S5), who scored above fifty (Raw score fifty-four (51%) in the Word Identification test, no other students were in the 50% and above range in any of these tests. The lowest percentages were in the Spelling and Word Attack tests.
Three students were absent for the final three tests.

4.3.5   Analysis of Word Attack Test (End of Semester) – Treatment Group 1.

The results of the final Word Attack Test (See Appendix 37 for schedule of results on Word Attack – Word Identification – Spelling tests done at the end of the semester) indicate that the students in Treatment Group 1 were at an age equivalent of six years eleven months to eight years ten months of age at the end of the semester. This estimation is taken from the Table of Scores in Woodcock (1997, p. 144 – Answers for Form G test). Of the forty-five total words tested, the highest raw score

was twenty-four (53% - TG1-S1). The raw scores following this were twenty-three (52% - TG1-S8); twenty-two (49% TG1-S3) and twenty (44% - TG1-S10). Six students followed with raw scores ranging from fourteen (31%) to eighteen (40%). The remaining students raw scores were from a low of three (7%) to a maximum of eleven (24%) with only two students, TG1-S2 and TG1-S12 getting raw scores of three and five respectively, all other raw scores were above five

4.3.6 Analysis of Word Identification Test (End of Semester) – Treatment Group 1.

The results of the final Word Identification test, according to the Table of Scores in Woodcock (1997, p. 143 Form G), indicate that the students age equivalent was between seven years three months and eight years ten months. The raw scores were higher than the Word Attack test with a highest raw score of fifty-seven (54%) by TG1-S10, who was in the top five in the Word Attack test. There were no other raw scores in the fifties with the next raw score being forty-nine (46%) to TG1-S1, and another eight students in the forties ranging from a raw score of 48 (45% - TG1-S20) to forty (38% - TG1-S9). In the remainder of the students the lowest raw score was twenty-six (25% - TG1-S4) and the highest thirty-nine (37% - TG1-S14).

4.3.7 Analysis of Spelling Test (End of Semester) – Treatment Group 1.

The second and final spelling test was taken from Form B in Larsen et al. (1999, p. 59) and as in the first test, only the first twenty-five words were used for the test. The highest raw score was twelve (48%) by TG1-S3, who scored in the top five in the Word Attack and Word Identification tests. Two students got eleven words correct (TG1-SS8 and 10) and two students got ten words correct (TG1-SS9 and 19). The remainder of the students ranged from one word correct (TG1-S12) to nine words correct (TG1-S5). Three students got below five correct in this test (TG1-S12 – 1; TG1-SS 11 and 18 – 4). From Larsen et al.'s (1999, p. 56) Table C.1 which converts raw scores from these tests to spelling age equivalents, these students are in the below six years of age range, which is the minimum age listed, to a maximum of seven years nine months.

4.3.8 Summary of findings of Treatment Group 1 on the above three tests.

It would appear from the reading age equivalent rates given in Woodcock (1997) the students in this group moved up from the range five to eight years one month

equivalent to six years eleven months to eight years ten months in the Word Attack Test. In the Word Identification Test the students moved from the range of six years six months to eight years six months to seven years three months to eight years ten months showing an increase in both age estimations. According to the Table in Larsen et al. (1999, p. 56), the students at the end of the semester were in the range from below six years to seven years nine months showing a possible improvement in the maximum spelling age as at the beginning of the semester the range was below six years to six years six months. Three students were amongst the top five in all three tests – TG1 SS-3, 10 and 20, and two students (TG1-SS1 and 5) were in the top scorers in the Word Attack and Word Identification tests, but slightly lower in the Spelling test. The students that had raw scores of five and below in the Word Attack tests had the lowest scores in the other two tests as well.

4.3.9 Comparison of Word Attack/Word Identification/Spelling Tests (Beginning and end of semester raw scores) – Treatment Group 1.

Table 5 below illustrates the raw scores of the above tests.

Key for colour code:

Blue – Improvement in score

Green – Remaining the same score

Yellow – Drop in score

Uncoloured – no comparison possible

Table 5 Raw Scores of Word Attack/Word Identification/Spelling Tests – Treatment Group 1. 1st Test (Beginning of Semester) 2nd (Test End of Semester)

Student	Word Attack		Word Identification		Spelling	
	1st Test	2nd Test	1st Test	2nd Test	1st Test	2nd Test
1	15	24	43	49	3	7
2	4	3	25	33	4	6
3	11	22	37	45	7	12
4	8	9	30	26	1	6
5	16	16	54	44	3	9
6	8	14	46	42	5	8
7	6	15	47	47	6	5
8	19	23	46	44	3	11
9	15	18	37	40	3	10
10	7	20	46	57	4	11
11	9	a	33	a	2	4
12	6	5	29	29	1	1
13	0	a	5	a	1	a
14	5	11	36	39	4	8
15	4	8	26	35	3	7
16	7	a	37	37	4	a
17	5	17	37	49	a	7
18	6	11	27	29	1	4
19	a	10	a	41	6	10
20	5	18	43	48	3	7
Total	156	244	684	724	64	133

Sixteen students in Treatment Group 1 completed all three of the above tests and eight of these students improved their raw scores on all three of the tests. These are TG1-SS 1, 3, 9, 10, 14, 15, 18 and 20. Five students improved in two tests out of the three, these are students 2, 5, 7, 9 and 18. Although TG1 -S2 dropped by one mark

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in the Word Attack second test from a four to a three he improved on both the Word Identification and Spelling test. TG1-S4 improved on both the Word Attack test and Spelling test and dropped four on the second Word Identification test. TG1-S5 had the same raw score on the first and second Word Attack test (16), dropped one mark on the Word Identification Test (54 – 44), but improved on the spelling test from a raw score of three to nine. TG1 SS-6 and 8 improved their raw scores on the Word Attack and Spelling, but dropped four and two respectively on the Word Identification test. There was little improvement indicated in TG1-S12 with his score remaining the same in the Word Identification Test and the spelling at twenty-nine and one respectively, and his raw score on the Word Attack test dropped from six to five. TG1-S17 improved on both the Word Attack and Word Identification test, but unfortunately never did the first spelling test so it was not possible to compare his score.

In the first Word Attack test the highest raw score was nineteen (TG1-S8) and the lowest was zero (TG1-S13). In the second Word Attack test the highest raw score was twenty-four (TG1-S1) and the lowest was 3 (TG1-S2). In the first Word Identification test the highest raw score was fifty-four (TG1-S5) and the lowest was 5 (TG1 S13). In the second test the highest raw score was fifty-seven (TG1-S10) and the lowest was twenty-six (TG1-S4). TG1-S13 was absent for the second tests so unfortunately it is not possible to see if he improved or not. In the first Spelling test the highest raw score was six (TG1-S7) and the lowest was one by four students (4, 12, 13 and 18). In the second test the highest raw score was twelve (TG1-S3) and the lowest was one by TG1-S12. Findings indicate that in all the tests the highest raw scores increased in the tests at the end of semester – Word Attack: nineteen to twenty-four – Word Identification: fifty-four to fifty-seven and Spelling: six to twelve. The low scores showed improvement in Word Attack zero to three and Word Identification being the most significant from five to twenty-six, but remained the same in the Spelling Test at one.

It can be seen by the total scores given that the numbers of correct answers improved on all the tests. Taking into consideration the number of students that were absent, such as one student in the first Word Attack test and three in the second,

there is an increase in the correct answers of 88, from 156 correct to 244. With regard to the Word Identification tests there was one student absent in the first test and two in the second and the correct answers increased by 40, from 684 to 724. In the Spelling tests there was also one student absent in the first and two in the second test and the number of correct answers increased by 69, from 64 to 133. Therefore, although the number of students absent in all tests increased in the second tests, there was still an increase in correct answers.

For reference I include a chart indicating the raw scores in percentages.

Key for colour code:

Blue – Improvement in score

Green – Remaining the same score

Yellow – Drop in score

Uncoloured – no comparison possible

Table 6– Raw scores from Table 5 shown in Percentages.

Student	Word Attack		Word Identification		Spelling	
	1st Test	2nd Test	1st Test	2nd Test	1st Test	2nd Test
1	33	53	41	46	12	28
2	9	7	24	31	16	24
3	24	49	35	42	28	48
4	18	20	28	25	4	24
5	36	36	51	42	12	36
6	18	31	43	40	20	32
7	13	33	44	44	24	20
8	42	51	43	42	12	44
9	33	40	35	38	12	40
10	16	44	43	54	16	44
11	20	a	31	a	8	16
12	13	11	27	27	4	4
13	0	a	5	a	4	a
14	11	24	34	37	16	32
15	9	18	25	25	12	28
16	16	a	35	a	16	a
17	11	38	35	46	a	28
18	13	24	25	27	4	16
19	a	22	a	43	24	40
20	11	40	41	45	12	28
Total	346	511	635	654	256	532

The percentages are mostly below 50%. In the second Word Attack Test TG1-S1 got 53%, the highest percentage in the test and the only one in the fifties. In the second Word Identification Test TG1-S10 got 54%, again the highest percentage in the test and the only one in the fifties. The highest percentage in the second Spelling Test was TG1-S3 with 48%.

Collective percentages were taken from Table 6 above on the Word Attack, Word Identification and Spelling tests given at the beginning of the semester before phonics instruction and the Word Attack, Word Identification and Spelling tests given at the end of the semester after phonics instruction. The two figures below illustrate

how the students' percentages changed between the tests. Figure 1 below illustrates the students' collective percentages in Treatment group 1 for all three tests, mentioned above given at the beginning of the semester. Figure 2 illustrates the students' collective percentages obtained in the tests at the end of the semester by Treatment Group 1. The collective percentages shown in Figure 2 highlight there are more students in the higher range of percentages achieved by the students.
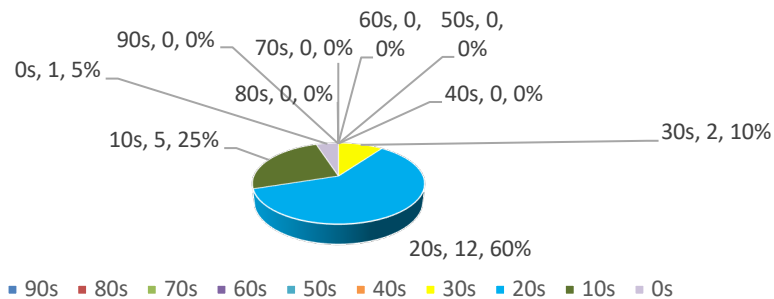
Figure 1 Collective percentages obtained in Word Attack, Word Identification and Spelling – Treatment group 1 – First Tests.
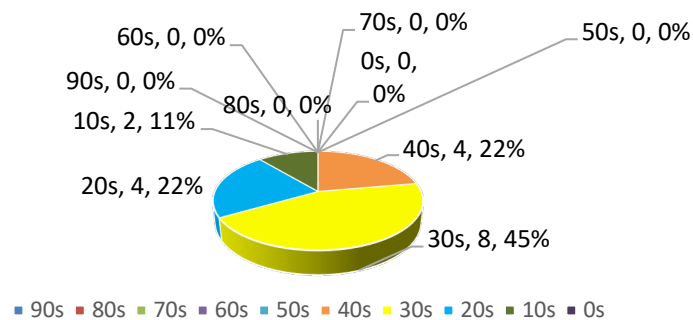
Figure 2– Collective percentages obtained in Word Attack, Word Identification and Spelling – Treatment group 1 – Second Tests.

4.3.10 Phoneme/Grapheme test results – Treatment Group 1

Because of time constraints it was not possible to do a mixed phoneme/grapheme test at the beginning of the semester and one at the end of semester for comparison. However, towards the end of the semester and after phonics instruction one test was done and these results can be used to compare data between groups. The phonemes and graphemes that were tested were the same as in the test given to the

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pilot group. The graphemes matched the phonemes /eɪ/; /iː/; /aɪ/; /əʊ/; and /uː/. (See Appendix 38 for Schedule of Results). The students were given twenty words as they were called out for other activities before the test could be completed (twenty five words in pilot group).

4.3.10.1   Analysis of Phoneme section of the test – Treatment Group 1

The students that received the highest scores in the phoneme section were TG1-Students 3 (18), 2 (17), 1 (16), 10 (16), 14 (15), 20 (15) (The figures in the brackets indicate the number out of twenty that the student got correct). Findings from the other tests showed that TG1-S3 had the highest score in the second spelling test and was in the group of the top five scorers in the other tests. TG1-S2 was the lowest scorer in the second Word Attack test and had low scores on the other tests, but had the second highest score in the phoneme section of this test. TG1-S1 had the highest score in the second Word Attack test and was in the first five scorers in the other tests. TG1-S10 had the highest score in the second Word Identification test and was also amid the highest scorers in all tests. TG1-SS 14 and 20 were in the middle range of scores for most of the tests with similar marks on all tests apart from the second Word Identification test where TG1-S20 was in the first five highest scorers. Findings indicated that the top scorers in the phoneme section of the test, apart from TG1-S2, were the top scorers in the Word Attack, Word Identification and Spelling tests. With regard to the lowest marks TG1-S15 received the lowest correct phonemes with five correct; he was within the group of the lowest five scorers in all the tests. TG1-S12, the second lowest, received nine correct phonemes and in the other tests he was also in the last five scorers and did not show much improvement in the second tests getting the same marks for two of the tests and dropping slightly in one. Not all students that did well on the Word Attack, Word Identification and Spelling tests did well on the phoneme section of this test; TG1-S8 who had the highest score on the first Word Attack test, and was the second highest scorer on the second Word Attack test, did fairly well in the Word Identification test and was just below the highest scorer in the second spelling test, was one of the lowest scorers in the phoneme section of this test with eleven correct phonemes out of the forty. Similarly, TG1-S5 who was one of the highest scorers in the first Word Identification test also scored eleven out of the forty in the phoneme test. Results indicate that

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most top scorers in the Word Attack, Word Identification and Spelling Tests were amongst the top scorers in the phoneme tests.

4.3.10.2   Analysis of the Grapheme Section of the Test – Treatment Group 1.

Similar to the findings in the pilot group, the grapheme scores were remarkably lower than the phoneme scores. The highest score correct in this group was eleven by TG1-S3, the student who also had the highest score in the phoneme section of this test. TG1-S2, who got the second highest mark in the phoneme section, also had the second highest mark in the grapheme section (nine correct). TG1-SS-9 and 10 also got nine correct in the grapheme section; they were in the top five scorers in the phoneme section. The lowest mark was 4 by TG1-SS-12 and 17 who had low scores on all tests.

4.3.11 A discussion, as well as a comparison, of questionnaires from the beginning and end of semester. – Treatment Group 1.

4.3.11.1   Results/discussion from Questionnaires at the beginning of the semester - Teaching Group 1

There were twenty two students in this group at the beginning of the semester, therefore twenty two completed the questionnaire. However, two students left the group shortly after the completion of the questionnaire and did not participate in any of the tests. At the stage of completing the questionnaire eighteen students were between seventeen and nineteen years old. The four students remaining ranged between the ages of twenty and thirty. Twenty of the students attended a public primary school with only two students attending both public and private schools and all of the students attended a public secondary school. Two thirds started to study English at the beginning of their schooling in Grade 1 (four to five years), five around the age of ten and the remaining three in their teens. Only one student learned to match the sounds of English to letters during his primary and secondary education. The majority of students that have younger siblings or children have noticed that the method their siblings or children are learning English is different and that they are being taught phonics. Only one student confirmed that he could match the sounds of English to letters. All respondents felt phonics instruction would improve their reading, spelling, vocabulary, writing, listening and speaking.

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4.3.11.2 Results/discussion from Questionnaires at the end of the semester – Treatment Group 1

Seventeen students completed the questionnaire at the end of the semester. Fifteen of the students said that they can now match the sounds of individual letters and eleven students said that they can match sounds to groups of letters. Fourteen confirmed that the course helped them achieve this. Although fourteen of them stated that they guessed a word they did not know when reading, thirteen students confirmed they tried sounding the word out. The majority of the students confirmed that they tried to learn the sound to letter combinations and now know more than they did before the phonics instruction. They do, however, admit that they do not know all the sound/letter combinations we have covered. The majority of the students would like instruction in phonics to continue in following semesters, but feel that one lesson a week is insufficient. The reasons given for either wanting or not wanting lessons to continue will be listed below. All, but two, students felt that the lessons had helped them with their English and the majority felt that the phonics instruction helped in areas such as spelling, reading, writing, speaking, listening and vocabulary. All students felt it was difficult to break up words into sounds, but that it had become easier since having phonics instruction. The majority of the students would recommend these classes to other students.

Reasons given for phonics instruction to continue: (These are given as they are written)

1. Yes, beuese our mege she helping for our calss.
2. Becaues help me in English.
3. We need more staday.
4. Yes, we need more class for thes.
5. I have learn more.
6. Because is helpe us to how to sounds the letters or word.
7. Yes, because our mese she helping for our class.
8. You have the learn.

Reasons for classes not continuing:

1. Because I not understand for thes class and I don't have time for learn in the next semester.

2. In the English, it has many thing important of spelling.

3. I don't understand.

Other comments are:

1. I want to say can I have more class about this to help me.

2. It's help me. I think it's ok very will.

3. (From the student that said he did not have time to learn above he wrote in other comments):

Yes, I need to give me more class for thes because wane I learn I don't understand.

4. Thank you Ms.

4.4   Analyses on Tests and Questionnaires on Treatment Group 2.

The same tests and questionnaires were given to Treatment Group 2 as were given to Treatment Group 1. These tests were the Word Attack and Word Identification Tests from Woodcock (1997), and twenty-five words from Spelling Tests Form A and B from Larsen et al (1999, pp. 58 & 59).

4.4.1   Analysis of Word Attack Test – (Beginning of Semester) Treatment Group 2.

Two students were absent for the Word Attack and Word Identification Tests. The results of the first Word Attack Test (See Appendix 39 for Schedule of Results on all three tests done at the beginning of the semester Word Attack – Word Identification – Spelling) indicated that the students in Treatment Group 2 were at a reading age equivalent of six years eleven months to seven years ten months. The lower age equivalent in this group is almost two years higher than Treatment Group 1, but the highest is the slightly lower by three months. The estimation is taken from the Table of Scores in Woodcock (1997, p.149). Out of the possible forty-five correct answers the highest raw score in this group was seventeen (38%) by TG2-S2 which is two lower that Treatment Group 1, which made a three month difference in the reading age equivalent estimation. The next highest score was sixteen correct (TG2 – S10 – 36%), followed by two students with thirteen correct (TG2-SS-4 and 17 (29%)). The balance of the top five scorers were two students, one with twelve correct and the other with eleven (TG2-SS-11 and 12 respectively). The balance of the students obtained raw scores ranging from ten correct (TG2-S1 – 22%) down to three (TG2-

S9 – 7%). Apart from a slightly higher raw score in Treatment Group 1 and a lower raw score of zero by one student in the group the range of raw scores is very similar by both Treatment Group 1 and 2.

4.4.2   Analysis of Word Identification Test (Beginning of Semester) Treatment Group 2.

The raw scores of the Word Identification test were higher than the Word Attack test indicating, according to the Table of Scores in Woodcock (1997, P. 148), that the reading age equivalent of this group was from seven to eight years six months, similar to Treatment Group 1. The age equivalent does indicate, however, that the estimation on the lower range is seven years so six months higher than Treatment Group 1. The highest raw score was identical to Treatment Group 1 which was fifty-four (TG2-S2 – 51%) – this student was the highest scorer in the Word Attack test as well. The raw scores then drop to forty-seven (TG2-S11 – 44%), forty six (TG2-S17 – 43%), forty-four (TG2-S12 – 42%) and forty-three (TG2-S8 – 41%).   The raw scores following these scores in the forties range from forty (TG2-S6 – 38%) to the lowest raw score of seventeen (TG2-S9 – 16%).   The student that received the lowest raw score in this test (TG2-S9) also received the lowest raw score in the Word Attack Test; this is the same case in Treatment Group 1 where the lowest scorer was the same student although the lowest raw score in Treatment Group 1 was five not seventeen which is probably why the age equivalent reading test indicated that this group was at a slightly higher reading age than Treatment Group 1.

4.4.3   Analysis of Spelling Test (Beginning of Semester) Treatment Group 2.

This test is the same test that was given to Treatment Group 1 – the first twenty five words from Form A in Larsen et al. (1999, p. 58). Similarly, to Treatment Group 1, the highest raw score in Treatment Group 2 was seven, but in Treatment Group 1 only one student had this raw score and in Treatment Group 2 there were six students with a raw score of seven (TG2-SS-2, 4, 9, 11, 12 and 17 – 28%). Most of these students were within the group of the highest scorers of the previous two tests, however, TG2-S9 was the lowest scorer in the previous two tests, but in the top five in this spelling test. According to the Scoring Table in Larsen et al. (1999, p. 56), the students in this higher scoring group are at a spelling age equivalent of six years six months of age. The balance of the students have raw scores from five to two, the lowest students are TG2-S13 and TG2-S16 who scored in the lower range of marks

in the previous two tests as well which would lower the spelling age to below six years.

4.4.4 Summary of findings of Treatment Class 2 in the above three tests.

The results show that Treatment Group 2 had raw scores, although slightly higher, very similar to Treatment Group 1. It would appear that most students in the top five high raw scoring ranges in Treatment Group 2 are the best achievers in all three tests, apart from one student TG2-S9 who had low scores in the Word Attack and Word Identification tests, but was in the top five in the Spelling test. Only one student scored a percentage above fifty with 51% (TG2-S2) and that was in the Word Identification test which was the same in Treatment Group 1 – one student with 51%. The lowest percentages were in the Word Attack Test, improving slightly in the Spelling Test and the highest percentages were in the Word Identification Test, similar to Treatment Group 1.

4.4.5 Analysis of Word Attack Test Results (End of Semester) – Treatment Group 2.

The results of the final Word Attack Test at the end of the semester, (See Appendix 40 for Schedule of Results on Word Attack – Word Identification – Spelling Test), indicated that the students in Treatment Group 2 were at a reading equivalent age of a minimum of seven years one month to a maximum of nine years one month which shows an increase in the reading age from the beginning of semester which was six years eleven months to seven years ten months (Woodcock, 1997, p. 144). TG2-S12 was the highest raw scorer with twenty five (56%), more than doubling his score from the first Word Attack Test. The only other raw score in the twenties was TG2-S4 with twenty-one (47%) also showing an improvement from a raw score of 13 (29%). Seven students follow this raw score ranging from seventeen (TG2-SS-16 and 17 38%) down to eleven (24% TG2-S13). Below this the raw scores range from ten to the lowest raw score of five). Although there were four students with the lowest raw score of five, there was no one with as low as three as in the first test.

4.4.6 Analysis of Word Identification Test Results (End of Semester) – Treatment Group 2.

The results of the Word Identification Test at the end of the semester, according to Woodcock (1997, p., 143), show the students were at a reading age equivalent of a

minimum of seven years three months to a maximum of eight years and three months, highlighting an increase of three months in the minimum age equivalent from the test at the beginning of the year which was seven years and a decrease of three months in the maximum range. The highest raw score was fifty-one (48%) by TG2-S17, dropping three to forty-eight (45%) by TG2-S3 and TG2-S12 for the second highest mark. Six other students in the forties ranged from a raw score of forty-five (42%) to forty (38%). The balance of the students in the class then scored from thirty-eight (36%) to twenty-six (25%). The minimum raw score in the first test was seventeen, so with twenty-six being the lowest raw score in the second test there is an increase of almost ten correct. Apart from one student in Treatment Group 1 who achieved a low score of five in the Word Identification test, the balance of the students' score was above twenty-five, close to the minimum raw score in Treatment Group 2.

4.4.7 Analysis of Spelling Test (End of Semester) Treatment Group 2.

The highest raw score in this group for the spelling test was fourteen (56%) by students TG2-S6 and TG2-S12, who scored in the first five in the two tests discussed above as well. Three students (TG2-S3, TG2-S9, TG2-S18) obtained eleven correct (44%) and four students (TG2-S5, TG2-S11 TG2-S13, TG2-S17) got a raw score of ten (40%). The balance of the students' raw scores ranged from a high of nine (36%) to a low of four (16%). According to Larsen et al.'s (1999, p. 56) Table of Scores the spelling ages of these students ranges from below six years of age to just eight years three months. Although no increase was indicated in the minimum spelling age, the maximum spelling age increased by two years three months.

4.4.8 Summary of finding of Treatment Group 2 on the above three tests.

As mentioned above, the findings indicated that some of the reading age equivalent rates, according to Woodcock (1997), increased according to the scores in the Word Attack Test and the Word Identification Test. In the Word Attack test the minimum reading age increased by two months and the maximum by one year three months. The Word Identification raw scores give the minimum reading age in the final test at seven years three months, showing an increase in the estimation in the minimum age of three months, but a slight decrease in the maximum reading age equivalent from eight years and six months to eight years and three months. The Spelling test, according to Larsen et al. (1999), puts the students at the end of the semester at a

spelling age equivalent of below six years of age to a maximum of eight years and three months. Although there is no change in the minimum age equivalent there is an increase of almost two years in the maximum age equivalent. The students that achieved the higher raw scores in the tests seemed to score in the top five in all three tests with a few being just below the first five in one of the tests. I found it interesting that students TG2-S5 and TG2-S9 were two of the lowest scorers in the Word Attack Test and the Word Identification Test, but in the top five in the spelling test. These two students showed a similar pattern in scores in the tests at the beginning of the semester.

4.4.9 Comparison of Word Attack/Word Identification/Spelling Tests (Beginning and end of semester raw scores) Treatment Group 2.

Key for colour code:

Blue – Improvement in score

Green – Remaining the same score

Yellow – Drop in score

Uncoloured – no comparison possible

Table 7 Raw Scores of Word Attack/Word Identification/Spelling Tests – Treatment Group 2. 1st Test (Beginning of Semester) 2nd (Test End of Semester)

Student	Word Attack		Word Identification		Spelling	
	1st Test	2nd Test	1st Test	2nd Test	1st Test	2nd Test
1	10	a	28	a	0	9
2	17	10	54	45	7	a
3	a	13	a	48	4	11
4	13	21	38	37	7	8
5	4	5	28	34	3	10
6	7	12	40	44	5	14
7	5	5	27	33	a	7
8	8	12	43	41	4	a
9	3	9	17	33	7	11
10	16	a	39	a	5	8
11	12	14	47	38	7	10
12	11	25	44	48	7	14
13	4	11	30	34	2	10
14	a	5	a	30	3	4
15	a	5	a	26	4	4
16	13	17	36	40	2	9
17	7	17	46	51	7	10
18	8	10	35	36	5	11
Total	138	191	552	618	79	150

Fourteen of the eighteen students in this group did both the first and second Word Attack and Word Identification Tests. Fifteen of them completed both Spelling Tests.

Out of the fourteen students that completed the Word Attack and Word Identification Tests eight of the students increased their raw scores in both the tests. Students TG2-S9, TG2-S12, TG2-S13 and TG2-S17 more than doubled their raw scores from three to nine, eleven to twenty-five, four to eleven and seven to seventeen respectively. Eight other students improved their raw scores in the second test ranging from an improvement of two to seven more correct. Student TG2-S2 dropped from seventeen to ten in the second Word Attack Test and one student TG2-S7 remained the same with five correct. In the Word Identification Test one student TG2-S9, almost doubled his raw score from seventeen to thirty three, but was still one of the lowest scores in the group. The nine other students that improved their raw scores improved them by one to nine more correct. In the Spelling Tests, out of the fifteen students that completed both tests, all but one student showed improvement. Four of these students doubled their raw scores, two students almost trebled their raw scores and one student managed to improve from zero to nine TG2-S1. One student had the same raw score of four for both spelling tests.

Ten students in the class completed all six tests and eight students showed an improvement in raw scores in the second tests. The other two students' raw scores dropped in the Word Identification second test, TG2-S4 dropped by one mark and TG2-S11 dropped by nine.

The total figures show an improvement in the raw score across all three tests. It should be noted that there were three students absent for the first Word Attack test which could account for the lower score and contribute to the improvement in score however, there were two students absent in the second Word Attack test and the improvement is an increase of 53 words correct, from 138 to 191. There was the same number of students absent in the Word Identification first and second tests which showed an improvement in the raw scores of 66, from 552 to 618. In the first Spelling test there was one student absent and in the second test two students, however, there was still an improvement from 79 words correct to 150 words, an overall improvement on raw scores of 71.

Key for colour code:

Blue – Improvement in score

Green – Remaining the same score

Yellow – Drop in score

Uncoloured – no comparison possible

Table 8 shows the above raw scores in percentages.

Student	Word Attack		Word Identification		Spelling	
	1st Test	2nd Test	1st Test	2nd Test	1st Test	2nd Test
1	22	a	26	a	0	36
2	38	22	51	42	28	a
3	a	29	a	45	16	44
4	13	47	36	35	28	32
5	9	11	26	32	12	40
6	16	27	38	42	20	56
7	11	11	25	31	a	28
8	18	27	41	39	16	a
9	7	20	16	31	28	44
10	36	a	37	a	20	32
11	27	31	44	36	28	40
12	24	56	42	45	28	56
13	9	24	28	32	8	40
14	a	11	a	28	12	16
15	a	11	a	25	16	16
16	29	38	34	38	8	36
17	16	38	43	48	28	40
18	18	22	33	34	20	44
Total	293	425	520	583	316	600

The above table showing the raw scores in percentages highlights that there are only four instances of students achieving in the fifties in all tests. One student (TG2-S12) gets 56% in the second Word Attack test. There are no other percentages in the fifties in this test. Student TG2-S2 got 51% in his first Word Identification test, but

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there are no percentages in the fifties in the second test. In the second Spelling Test there are two students, TG2-S6 and TG2-S12 who both get 56%. These are the highest percentages achieved in the tests.

Collective percentages were taken from Table 8 above on the Word Attack, Word Identification and Spelling tests given at the beginning of the semester before phonics instruction and the Word Attack, Word Identification and Spelling tests given at the end of the semester after phonics instruction. The two figures below illustrate how the students' percentages changed between the tests. Figure 3 below illustrates the students' collective percentages in Treatment group 2 for all three tests, mentioned above given at the beginning of the semester. Figure 4 illustrates the students' collective percentages obtained in the tests at the end of the semester by Treatment Group 2. The collective percentages shown in Figure 4 highlight there are more students in the higher range of percentages achieved by the students.

Figure 3 – Collective percentages obtained in Word Attack, Word Identification and Spelling – Treatment group 2– First Tests.

Figure 4 – Collective percentages obtained in Word Attack, Word Identification and Spelling – Treatment group 2 – Second Tests.

4.4.10 Phoneme/Grapheme test results – Treatment Group 2.

Similar to the situation with Treatment Group 1 it was only possible to do one Phoneme/Grapheme Test and this was given after phonics instruction and only on the graphemes that matched the phonemes /eɪ/; /iː/; /aɪ/; /əʊ/; and /uː/ (See Appendix 41 for the Schedule of Results). The test that was given was the same as the test given to the Pilot Group (second test) and Treatment Group 1 – twenty words testing the students' skills in finding the correct phoneme column and using the correct grapheme if possible (See Appendices 4 & 5 for sample of tests).

4.4.10.1   Analysis of Phoneme section of the test – Treatment Group 2.

The highest scores in the phoneme section of the test were Students TG2-S5 and TG2 S-17 with 19 followed by four students TG2-S6, TG2-S10, TG2-S16 and TG2-S18 with eighteen correct. These students were followed closely by TG2-S9 with seventeen, TG2-S7 with sixteen and TG2-S2 with fifteen. Seven of the students remaining had correct answers ranging from nine to fourteen. One student was absent for this test.

The pattern of most of the students that appear in the top five scores in the phoneme section in this test and being top scorers in the Word Attack Tests, Word Identification Tests and Spelling tests seems to be repeating itself. There is the exception of students TG2-S5 and TG2-S9 who did poorly in both the Word Attack Tests and both the Word Identification Tests, but well in the Spelling Tests and well in the phoneme matching test. Student TG2-S5 got nineteen of the twenty correct and student TG2-S9 got seventeen of the twenty correct in the phoneme test. The lowest score was nine out of the twenty and the three students that got nine were TG2-S8, TG2-S14 and TG2-S15. Student TG2-S8 was in the middle range of scorers in the Word Attack, Word Identification and Spelling Tests, however TG2-S14 and TG2-S15 were in the lower rankings in scores in these tests (TG2-S15 was, unfortunately, absent for the first Word Attack and Word Identification tests).

4.4.10.2   Analysis of the Grapheme section of the test – Treatment Group 2.

This group's marks were significantly higher than the Pilot Group and Treatment Group 1. Eleven students achieved ten and above correct, ranging from ten to sixteen, in this group and six below ten with the lowest score being nine, whereas in Treatment Group 1, only one student achieved eleven correct and the lowest score

correct was two. The highest score, being sixteen, was achieved by two students TG2-S5 and TG2-S17. Interestingly, TG2-S5 was the student that shared the highest mark of nineteen correct in the phoneme test and is the student that was middle range in the Word Attack and Word Identification Tests, but did well in the Spelling Tests. He seems to achieve higher scores in spelling and matching phoneme and grapheme connection. This also seems to be the case with TG2-S9, who was one of the third highest scorers in this test with twelve correct and the phoneme section with seventeen correct, although this student's raw scores in the Word Attack and Word Identification Tests were in the lower range in the second test and the lowest in the first test. The other students that achieved scores in the top five in the grapheme section of this test appear in the top five in most of the other tests. Most of the lower scorers (the students with five and below) in the grapheme section of the test have also had low marks in the phoneme section and in the other tests.

4.4.11 A discussion, as well as a comparison, of questionnaires from the beginning and end of semester. – Treatment Group 2.

4.4.11.1 Results/discussion from Questionnaires at the beginning of the semester - Treatment Group 2.

At the beginning of the semester there were twenty-one students in this class and nineteen of them were between the ages of seventeen and nineteen, the other two students were between twenty and twenty-seven. Eighteen of the students attended a public school with three students attending both a public and private school. Fifteen of the students started to study English at the age of six and the balance of the students started from ages eight and above with four of the students only starting at fifteen years of age. The majority of the class remembered studying the sounds of English and matching them to graphemes, but not graphemes of more than one letter. This is one point where these students differ from the students in Treatment Group 1, where only one student indicated that he had studied sound and letter matching. Of the sixteen students that had younger siblings, most of them responded that their siblings were learning English differently to the way they learned English. Twenty of the students confirmed that they could not match phonemes to graphemes, and all the students believed that if they learned this skill it would improve their writing and reading. Therefore, similarly to Treatment Group 1, there was only one student who confirmed he could match English sounds to letters. The

students in this group all highlighted writing and reading as areas that would improve should they learn the skill of matching sounds to graphemes and eleven of the students highlighted all the areas as being significant.

4.4.11.2 Results/discussion from Questionnaires at the end of the semester - Treatment Group 2.

Although there were eighteen students in this group by the end of the semester, because three left the class soon after completing the first questionnaire, only sixteen filled in the final questionnaire. Ten of the students felt that they could now sometimes match sounds to individual letters and eleven students confirmed that they could sometimes match sounds to groups of letters. The balance of the class felt that they could now match individual letters and groups of letters to sounds. The whole class responded that the course had helped them achieve this, similar to Treatment Group 1. Half the class responded that whilst reading they sometimes guess the word and sometimes try and work it out using sound and letter matching. When writing ten of the students said that they sometimes try and match the letter/sound combination with six confirming they use this method. Fifteen of the students responded that they now know more sound to letter combinations than they did before the lessons, although only seven of the students said they had taken time to learn the combinations and eight of the students said they had learned some of them. Only four of the students said they had attempted to learn all of the sound and letter combinations we had covered. All of the students said they would like the lessons to continue in the following semester. The reasons they gave for wanting the lessons were:

1. Becuse help me (eight comments like this)
2. Becous help me for speak (two comments like this)
3. Becous I need to save and he is help me
4. I think this can it help me in the life
5. Yas becace it help me for the lessons
6. Yes because you very good and you very help me
7. Because help student and help me and some people need this
8. Because I want to learn this

All of the students felt that phonics instruction had helped them in all areas of their English with the majority saying it had helped their listening. Two thirds of the

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students thought that one lesson a week was not enough, which is a similar response to Treatment Group 1. Although most of the students said they still found it difficult to break up words into sounds, they all felt that it was easier since they had had phonics instruction and that they would all recommend these lessons to other classes, which again was similar to responses in Treatment Group 1.

Comments about the course were:

1. He help myself and people
2. He help me 2
3. I want all things in class
4. I think this word help me and my friend. Any people he need new word.

No students in Treatment Group 2 responded that these classes should not continue.

4.5   Analyses of Tests and Questionnaires on Treatment Group 3.

This is the last group of students that received phonics instruction and therefore the final treatment group. The total number of students in treatment groups is fifty-four. This is excluding the nineteen students in the pilot group.

There were sixteen students in this group and three students were absent for the first three tests of the semester.

4.5.1   Analysis of Word Attack Test – (Beginning of Semester) Treatment Group 3.

The results of the Word Attack Test at the beginning of the semester in this group, according to the Table of Scores in Woodcock (1997, p. 149), put the students in the minimum age equivalent of six years and ten months to a maximum of seven years and ten months. (See Appendix 41 for the results of this test and the following Word Identification and Spelling Tests). The highest raw score was sixteen (36%) by TG3-S4, followed closely with fifteen (33%), by student TG3-S5. Other students of ten and above were TG3-S9 and TG3-S16 with twelve (27%) and TG3-S15 with ten (22%). The other eight students had raw scores ranging from a low of two (11%) by TG3-S11 to eight.

4.5.2 Analysis of Word Identification Test (Beginning of Semester) Treatment Group 3.

Following a similar pattern to all previous classes the raw scores in the Word Identification Test were higher. The students' results in this test, according to Woodcock (1997, p. 148), put them in the reading age equivalent of the minimum range of seven years two months to a maximum range of eight years. The same two students who were the highest scorers in the Word Attack Test discussed above were the highest scorers with TG3-S5 getting forty-seven (44%) and TG3-S4 forty-four (42%) and student TG3-S15 also got forty-four. Three other students scored in the forties and four in the thirties. The lowest raw score was by TG3-S11, the same student who scored the lowest in the Word Attack Test, with a raw score of twenty-one (20%).

4.5.3 Analysis of Spelling Test (Beginning of Semester) Treatment Group 3.

The Spelling Test results revealed, according to Larsen et Al. (1999, p. 56), that the students were at a spelling age from below six years of age to a maximum of seven years which was the result of the raw score of nine (36%) by TG3-S5. The raw scores then drop to seven by two students, and then six by three students. The scores continue to drop to one (4%), from student TG3-S11, who was the lowest scorer in all three tests. Six students had raw scores of below five which puts all of these students below the reading age of six.

4.5.4 Summary of findings of Treatment Group 3 in the above three tests.

A similar pattern seems to be forming, as has been present in previous groups, with the students receiving higher raw score results in the Word Identification Tests. However, similarly, the age equivalents, according to Woodcock (1997) and Larsen et al. (1999) are significantly low in this group as with the other two Treatment Groups. The students that were in the top five scoring range for all three tests were Students TG3-SS-4, 5, 15 and 16. The students that were in the lower raw scoring range in all three tests were TG3-SS-1, 2 and 11.

4.5.5 Analysis of Word Attack Test Results (End of Semester) – Treatment Group 3.

One student was absent for the Word Attack and Word Identification Tests at the end of the semester. He did the spelling test.

The results of the final Word Attack test show that the students, at the end of the semester, according to Woodcock (1997, p. 144), were at a reading age equivalent of a minimum range of seven years two months to a maximum range of eight years seven months (See Appendix 42 for the results on this test and Word Identification and Spelling Tests). This indicates an increase of four months in the minimum age equivalent reading range and an increase of nine months in the maximum range. Student TG3-S16 had the highest raw score of twenty-three (51%). There were only two scorers in the teens with TG3-S8 with seventeen (38%) and TG3-S15 with fourteen (31%). The balance of the raw scores ranged from a low of six (13%) by TG3-S6 to eleven.

4.5.6 Analysis of Word Identification Test Results (End of Semester) – Treatment Group 3.

The highest raw score in this test was forty-six (43%) by TG3-S7; this student was amongst the low scorers in the Word Attack test (below 10). However, TG3-S16, also with forty-six was the highest scorer in the Word Attack test. Following this raw score eight students had raw scores in the forties between forty and forty-five. Three students had raw scores in the thirties and the lowest score in this test was eighteen (17%) by TG3-S11. This puts this group in the reading age equivalent in the minimum range to seven years one month and the maximum to just seven years ten months showing a decrease in the range from the beginning of the semester by one month in the minimum range and two months in the maximum range, according to Woodcock (1997, p. 143).

4.5.7 Analysis of Spelling Test (End of Semester) Treatment Group 3.

The highest raw score in this test was sixteen (64%) by TG3-S5. The raw scores then drop from fifteen (60%), to fourteen (56%) and thirteen (52%), by students TG3-S14, TG3-S10 and TG3-S9 respectively. The balance of the students scored in a range from a low of six (24%) by TG3-S2 to eleven (44%) by two students TG3-S4 and TG3-S6. The spelling age equivalent given by Larsen et al. (1999, p. 56) was six years three months to eight years nine months, indicating an increase of possibly three months in the minimum range and one year nine months in the maximum range.

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4.5.8 Summary of findings of Treatment Group 3 on the above three tests.

The reading age equivalents given by Woodcock (1997) seem to indicate an increase in age in the Word Attack Tests, however, in this group, the Word Identification raw scores show the age equivalent decreasing in both the minimum and maximum range. The Spelling Test results, according to Larsen et al. (1999), show an improvement in the spelling age from below six years to the months above six years eight years nine months.

4.5.9 Comparison of Word Attack/Word Identification/Spelling Tests (Beginning and end of semester raw scores) Treatment Group 3.

Table 9 below illustrates a comparison of the raw scores achieved by Treatment Group 3 for the three tests at the end and the beginning of the semester.

Key for colour code:

Blue – Improvement in score

Green – Remaining the same score

Yellow – Drop in score

Uncoloured – no comparison possible

Table 9 Raw Scores of Word Attack/Word Identification/Spelling Tests – Treatment Group 3. 1st Test (Beginning of Semester) 2nd (Test End of Semester)

Student	Word Attack		Word Identification		Spelling	
	1st Test	2nd Test	1st Test	2nd Test	1st Test	2nd Test
1	4	9	37	40	3	10
2	3	6	33	33	4	6
3	5	a	29	a	6	8
4	16	13	44	44	6	11
5	15	10	47	44	9	16
6	a	6	a	42	a	11
7	6	8	40	46	3	7
8	8	17	41	44	4	7
9	12	11	33	37	2	13
10	7	10	39	42	7	14
11	2	8	21	18	1	8
12	a	10	a	45	a	10

13	a	11	a	40	a	9
14	8	11	22	42	6	15
15	10	14	44	38	5	7
16	12	23	42	46	7	7
Total	108	167	472	601	63	159

From the above table it can be seen that thirteen of the sixteen students have increased their raw scores in some of the fields. Five of the students have added to their raw scores in all three of the tests TG3-SS 1, 7, 8, 10, and 14. They might not all be in the top scoring group, but they have managed to improve their raw scores. Although TG3-S11 was in the lowest range of scorers in all the tests and the lowest in most of them, he has more than doubled his raw scores in the Word Attack and Spelling Tests, but dropped slightly in the Word Identification test. Student TG3-S5 was the top scorer in three of the tests, but his raw score dropped in the Word Attack test by five, and the Word Identification test by three, but in the Spelling Test he almost doubled his raw score. The table reflects that most of the students managed to improve their scores significantly in the Spelling Test. Below Table 10 illustrates the raw scores in percentages.

The total scores indicate that there is an increase of correct answers in all tests. Taking into account that in the first Word Attack test there were three students absent with a total of correct answers of 108, which increased by 59 to 167 correct in the second Word Attack test with one student absent. The absentees in the Word Identification tests were the same as in the Word Attack tests and the increase in correct answers was 129, from 472 to 601. Three students were absent in the first spelling test with a total of correct answers being 63, which increased to 159 in the second Spelling test, showing an increase of 96 with no students being absent in the second test.

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Key for colour code:

Blue – Improvement in score

Green – Remaining the same score

Yellow – Drop in score

Uncoloured – no comparison possible

Table 10 shows the above raw scores in percentages.

Student	Word Attack		Word Identification		Spelling	
	1st Test	2nd Test	1st Test	2nd Test	1st Test	2nd Test
1	9	20	35	38	12	40
2	7	13	31	31	16	24
3	11	a	27	a	24	32
4	36	29	42	42	24	44
5	33	22	44	42	36	64
6	a	13	a	40	a	44
7	13	18	38	43	12	28
8	18	38	39	42	16	28
9	27	24	31	35	8	52
10	16	22	37	40	28	56
11	4	18	20	17	4	36
12	a	22	a	42	a	40
13	a	24	a	38	a	36
14	18	24	21	40	24	60
15	22	31	42	36	20	28
16	27	51	40	43	28	28
Total	231	369	447	569	252	640

In the Word Attack test given at the end of the semester only one student achieved over fifty per cent – TG3-S16. The highest percentage was 64% in the second Spelling Test by TG3-S5, who had the highest percentages in the first and second Word Identification tests as well as the highest in the first and second Spelling Tests. Student TG3-S14 followed just below with a percentage of 60%, more than doubling his percentage from the first Spelling Test. Students' TG3-SS 9 and 10 percentages

were 52% and 56% respectively. The percentage range then went from 44% by two students to a low of 28%.

The Spelling Test raw scores and percentages in this group were significantly higher than the other two Treatment Groups and the Pilot Group.

Collective percentages were taken from Table 10 above on the Word Attack, Word Identification and Spelling tests given at the beginning of the semester before phonics instruction and the Word Attack, Word Identification and Spelling tests given at the end of the semester after phonics instruction. The two figures below illustrate how the students' percentages changed between the tests. Figure 5 below illustrates the students' collective percentages in Treatment group 3 for all three tests, mentioned above given at the beginning of the semester. Figure 6 illustrates the students' collective percentages obtained in the tests at the end of the semester by Treatment Group 3. The collective percentages shown in Figure 6 highlight there are more students in the higher range of percentages achieved by the students.
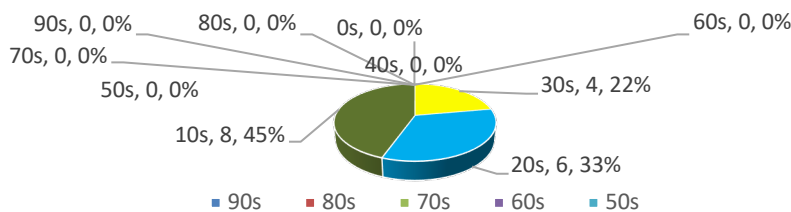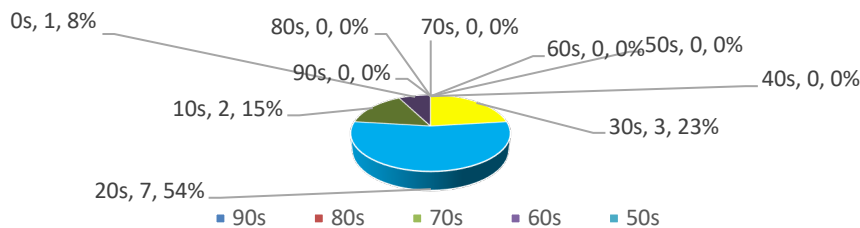

Figure 5 – Collective percentages obtained in Word Attack, Word Identification and Spelling – Treatment group 3– First Tests.
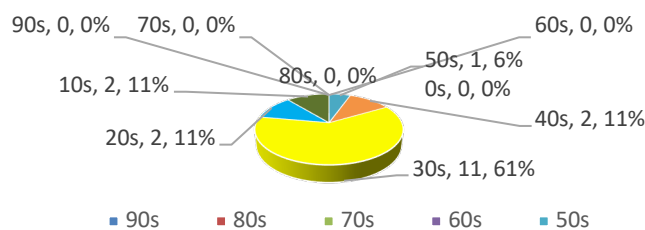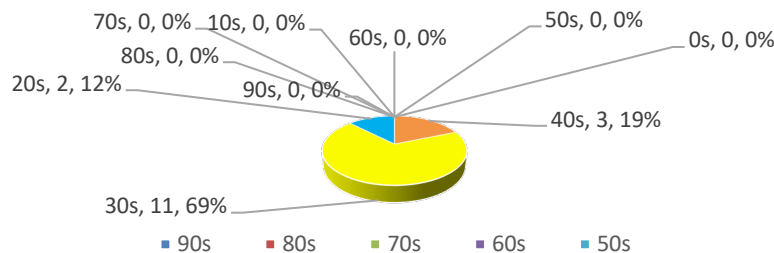

Figure 6 – Collective percentages obtained in Word Attack, Word Identification and Spelling – Treatment group 3– Second Tests.

4.5.10 Phoneme/Grapheme test results – Treatment Group 3

With this particular group it was possible to do more tests, however the last grapheme test that I did with the class was the same one as was done with the Treatment Groups 1 and 2 although these students could finish the test and therefore had twenty-five words. One student was absent (See Appendix 43 for the Schedule of Results). The other treatment groups did not do a second test so I was unabl to do a comparison of their scores.

4.5.10.1 Analysis of Phoneme section of the test – Treatment Group 3

Similar to the other Treatment Groups the scores for putting the word in the correct phoneme column were significantly higher than using the correct grapheme. The highest score in the phoneme section was nineteen out of the twenty-five words by student TG3-S8. Five students scored in the teens with the scores dropping steadily from seventeen by TG3-S10 to thirteen by student TG3-S16. Five of the students scored twelve and the last four students scored between a low of five and a high of ten.

4.5.10.2 Analysis of the Grapheme section of the test – Treatment Group 3.

As mentioned above, these results are significantly lower than the phoneme section of the test, with the maximum scored by TG3-S10 being ten. Two students, TG3-S5 and TG3-S15 followed with scores of eight. Student TG3-S5 scored the highest in most of the tests and has been in the top five in all tests. The scores then dropped from six to the lowest score in the section, two by TG3-S7. The lower scorers in this section of the test have been in the lower section of most the tests, students TG3-S1, TG3-S2, TG3-S11.

Key for colour code:

Blue – Improvement in score

Green – Remaining the same score

Yellow – Drop in score

Uncoloured – no comparison possible

Table 11 Comparison of Phoneme / Grapheme Tests Treatment Class 3

Student	Phoneme Tests Individual Results Correct Phoneme 25 words given 1st	Correct Phoneme 25 words given 2nd	Grapheme Tests Individual Results Correct Grapheme 25 words given 1st	Correct Grapheme 25 words given 2nd
1	12	12	10	5
2	7	9	4	5
3	14	a	8	a
4	18	12	10	5
5	12	16	9	8
6	15	14	6	4
7	13	5	4	2
8	18	19	13	5
9	11	12	5	3
10	11	17	7	10
11	5	8	3	5
12	12	14	7	6
13	13	10	4	4
14	18	12	9	6
15	15	12	9	8
16	15	13	10	6
Total correct	209	185	118	82
Possible correct Totals	400	400	400	400

The table above illustrates the differences in the raw scores between the phoneme and grapheme sections of the first and second tests. The tests were on the identical sounds to phonemes match and phonemes to graphemes match.   Although increases in raw scores are not substantial, it appears that the 43% of the students possibly increased their knowledge of sound to phoneme matching because their scores were slightly higher in the second test, however, in the grapheme section of the second test the majority of students' scores decreased possibly indicating a lack of increase in their grapheme knowledge.

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4.5.11 A discussion, as well as a comparison, of questionnaires from the beginning and end of semester. – Treatment Group 3.

Sixteen students completed the questionnaire at the beginning of the semester.

4.5.11.1　Results from Questionnaires at the beginning of the semester - Treatment Group 3.

The majority of the students were between the ages of seventeen and nineteen and were educated in Abu Dhabi. Only one of the students had primary education in a private school, and one in both public and private, and all the students received their secondary education in the public system. Two thirds of the students did not receive tuition in phonics and none of them feel they can match sounds to more than one letter. Although most of the students have younger siblings and they feel their siblings are learning English differently, most of the students do not know if they are learning phonics. None of the students feel that they can match phonemes to graphemes and most students indicated that if they received instruction in phonics it would help them in all the areas indicated on the questionnaire, reading, spelling, vocabulary, writing, listening and speaking.

4.5.11.2　Results from Questionnaires at the end of the semester - Treatment Group 3.

At the end of the semester all but one of the students said they try and match phonemes to graphemes since the course on phonics. Two thirds of the students said the course had helped them in this field. Most of the students said they use their phoneme/grapheme matching skills when they are writing and reading. Half of the students said they had taken time to learn the sound to letter combinations and although they had not covered all of the work that was covered they feel as though the course has helped them recognise more letter/sound combinations than they did before. Two thirds of the students commented that they would like the lessons to continue the following semester and just over half of the class thought that one class a week was not enough. Most of the class commented that the phonics instruction has helped them in all areas of English with spelling and reading being the most mentioned areas. Just over half of the students said that they do not find it difficult to break a word up into phonemes and that the phonics instruction had made it easier to use these skills. The majority of the class said that they would recommend phonics instruction to their peers.

Comments received from the students were:

1. Thank you
2. She has helped my
3. I angry in this class (Unfortunately as there are no names on the questionnaires I could not ask for an explanation of this statement).

4.6 Illustration tables and discussions of Word Attack, Word Identification and Spelling Tests in Treatment Groups 1, 2 and 3.

4.6.1 Treatment Groups' 1, 2 and 3 results of the Word Attack Tests

Key for colour code:

Blue – Improvement in score

Green – Remaining the same score

Yellow – Drop in score

Uncoloured – no comparison possible

Table 12 Word Attack Test Results for Treatment Group 1, 2 and 3 - Test 1 and Test 2.

Student	Word Attack Test 1			Word Attack Test 2		
	TG1	TG2	TG3	TG1	TG2	TG3
1	15	10	4	24	a	9
2	4	17	3	3	10	6
3	11	a	5	22	13	a
4	8	13	16	9	21	13
5	16	4	15	16	5	10
6	8	7	a	14	12	6
7	6	5	6	15	5	8
8	19	8	8	23	12	17
9	15	3	12	18	9	11
10	7	16	7	20	a	10
11	9	12	2	a	14	8
12	6	11	a	5	25	10
13	0	4	a	a	11	11
14	5	a	8	11	5	11
15	4	a	10	8	5	14
16	7	13	12	a	17	23
17	5	7		17	17	
18	6	8		11	10	
19	a			10		
20	5			18		
Total	156	138	108	244	191	167

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The table illustrates the raw scores of all students in the three groups on the first and second Word Attack tests. There were forty-five words given in these tests. Please note that Student 1 would be Student 1 in the particular group mentioned in the column, for example TG1-S1, TG2-S1 and TG3-S1. Because of the different numbers of students in the class I looked at the individual raw scores in the first test and identified that in the first test no students achieved a score of twenty or above, the highest score being 19. In the second Word Attack test there were seven students that scored in the twenty and above range with the highest being twenty five.

In the first test ten students across all three groups scored in the teens and this number increased in the second test to thirteen students scoring in the teens.

In the first test there were sixteen out of the nineteen students in Group 1 that did the test that scored five and above, twelve of the fifteen in Group 2, and ten of the thirteen in Group 3 bringing the total students in all groups scoring 5 and above to thirty-eight out of the forty-seven that did the test. In the second test the students that scored five and above increases to sixteen out of the seventeen that did the test in Group 1, sixteen out of sixteen in Group 2, and fifteen out of fifteen in Group 3, bringing the total to forty-seven out of the forty-eight students that did the second test.

There were a total of six students that scored below five in the first test across the groups and in the second test one student scored below five. From this it can be seen that the total raw scores increased across the groups.

I have used the same colour coding to highlight the students that improved, the students that kept the same raw scores and the students that dropped in score in the second tests. The highlighting shows that the majority of the students improved their raw scores between the two tests. There were a total of fifty-four students in these three treatment groups, and the results show that thirty-three of the students improved on their raw scores, out of the forty-one that did both tests. Six students dropped in their raw scores and two students did not make any improvement. Thirteen students' scores could not be compared because they were absent for one of the tests.

4.6.2 Treatment Groups' 1. 2 and 3 results of the Word Identification Tests

Key for colour code:

Blue – Improvement in score

Green – Remaining the same score

Yellow – Drop in score

Uncoloured – no comparison possible

Table 13 Word Identification Test Results for Treatment Group 1, 2 and 3. Tests 1 and 2.

Student	Word Identification Test 1			Word Identification Test 2		
	TG1	TG2	TG3	TG1	TG2	TG3
1	43	28	37	49	a	40
2	25	54	33	33	45	33
3	37	a	29	45	48	a
4	30	38	44	26	37	44
5	54	28	47	44	34	44
6	46	40	a	42	44	42
7	47	27	40	47	33	46
8	46	43	41	44	41	44
9	37	17	33	40	33	37
10	46	39	39	57	a	42
11	33	47	21	a	38	18
12	29	44	a	29	48	45
13	5	30	a	a	34	40
14	36	a	22	39	30	42
15	26	a	44	35	26	38
16	37	36	42	37	40	46
17	37	46		49	51	
18	27	35		29	36	
19	a			41		
20	43			48		
Total	684	552	472	724	618	601

There were 106 words in total in this test, however, most of the students could not go that far and stopped around the fifty to sixty word mark. In both the first and second tests there were two students that reached raw scores in the fifties and they were not the same students. In the forty and above range there were seventeen students in the first test and twenty-seven in the second test. The thirty and above range showed a slight increase from sixteen students in the first test to fifteen in the

second. Most of the students that were in the twenties range in the first test (fifteen students) moved up to a higher raw score and there were four students in this range in the second test. In both the first and second tests there was one student in the teens and they were not the same student and finally below ten there was only one student in the first test, but none in the second test.

I have used the same colour coding to highlight the students that improved in the second tests, the students that kept the same raw scores and the students that dropped in score in the second tests. Out of the total of forty-two (as there were twelve absent) students that did these tests, twenty-six students showed an improvement in their raw scores, eleven students dropped in their raw scores and five students did not make any change in their raw scores. Twelve students were absent for one of the tests and therefore their scores cannot be compared. These scores show that the majority of the students in the numbers that did the tests showed an improvement, but this number is lower than the students that showed an improvement in the Word Attack tests and the number of students that dropped in their raw scores and did not improve at all increased in these tests compared to the Word Attack tests. Six students dropped in their raw scores in the Word Attack tests compared to eleven in the Word Identification tests. Two students showed no improvement in the Word Attack tests whilst there were five in the Word Identification tests.

4.6.3 Treatment Groups' 1, 2 and 3 results of the Spelling Tests

Key for colour code:

Blue – Improvement in score

Green – Remaining the same score

Yellow – Drop in score

Uncoloured – no comparison possible

Table 14 Spelling Test Results for Treatment Group 1, 2 and 3. Tests 1 and 2.

Student	Spelling Test 1			Spelling Test 2		
	TG1	TG2	TG3	TG1	TG2	TG3
1	3	0	3	7	9	10
2	4	7	4	6	a	6
3	7	4	6	12	11	8
4	1	7	6	6	8	11
5	3	3	9	9	10	16
6	5	5	a	8	14	11
7	6	a	3	5	7	7
8	3	4	4	11	a	7
9	3	7	2	10	11	13
10	4	5	7	11	8	14
11	2	7	1	4	10	8
12	1	7	a	1	14	10
13	1	2	a	a	10	9
14	4	3	6	8	4	15
15	3	4	5	7	4	7
16	4	2	7	a	9	7
17	a	7		7	10	
18	1	5		4	11	
19	6			10		
20	3			7		
Total	64	79	63	133	150	159

The Spelling Tests were on twenty-five words each. There were no students that were in the range of ten and above in the first test, but in the second test there were twenty-two students out of the fifty students that were in the range of ten to sixteen. Sixteen was the highest raw score in the tests. In the first test there were twenty students in the range of five to nine and this increased slightly to twenty-three students in the second test. The largest group of students was the group consisting

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of twenty-eight students that got a raw score of below five in the first test, however, in the second test there were only five students that got below five words correct.

To summarise, only in the second test did any students get above ten words correct, and the students that received above five more than doubled in the second test from twenty students in the first test to forty-five in the second test. The number of students that got below five words correct in the first test decreased from twenty-eight students to five students in the second test.

The results indicate a possible increase in spelling skills from the beginning of the semester to the end of the semester. Ten of the fifty-four students in these three groups were absent for the one of the tests and therefore their raw scores could not be compared. Therefore out of the forty-four students' scores that could be compared only one student dropped in his raw score and three students kept the same raw score. Out of the forty-four students' raw scores forty showed improvement.

4.7 Analyses of Tests and Questionnaires on Comparison Group 1.

There were three Comparison Groups that participated in this research. These groups did the same exams as the three Treatment Groups at the beginning and the end of the semester. The conditions the exams were held in were exactly the same as the conditions for the Treatment Groups. There were a few differences in the tests given as the Comparison Groups did not do a Phoneme/Grapheme Test and did not complete a questionnaire at the end of semester. The first Comparison Group was a small group of eleven students.

4.7.1 Analysis of Word Attack Test – (Beginning of Semester) Comparison Group 1.

All eleven students were present for this test. The highest raw score in the first Word Attack test was nineteen (42%) by CG1-S7. The next highest raw score was fifteen (33%) by student-CG1 S5, and two students, CG1-S4 and CG1-S6, followed with a raw score of 13 (29%). Students CG1-S1 and CG1-S10 got twelve (27%) followed closely by CG1-S11 with eleven. The balance of the class, four students, had raw scores ranging from one, CG1-S3, to seven, CG1-S9. . These scores put the students in the reading age equivalent of a minimum of six years eight months to a

maximum of eight years one month (Woodcock, 1997, p. 149) (See Appendix 44 for the Schedule of Results of the Word Attack, Word Identification and Spelling Tests).

4.7.2 Analysis of Word Identification Test (Beginning of Semester) Comparison Group 1.

There were no absent students for the first Word Identification Test. The Word Identification raw scores were higher than the Word Attack scores, similar to the Treatment Groups. Student CG1-S5 had the highest score in this test with fifty-four (51%); he was the second highest scorer in the Word Attack test. Student CG1-S5 had the only raw score in the fifties; the next score was forty-nine (46%), by student CG1-S6, also a top scorer in the Word Attack test. Six students had raw scores ranging from forty (38%) to forty-five (42%). The lowest raw score was seven (7%) and one student scored in the thirties. According to Woodcock (1997, p. 148), the above raw scores put this group in the reading age minimum equivalent of six years eight months to eight years six months.

4.7.3 Analysis of Spelling Test (Beginning of Semester) Comparison Group 1.

Two students were absent for the first Spelling Test. The highest raw score was ten (40%), by student CG1-S1, and the next highest was eight (32%) by student CG1-S6. Six students scored seven (28%) and the lowest was six (24%) by CG1-S4. This range of raw scores places this group in the minimum spelling age range of six years three months to a maximum of seven years three months (Larsen et al. 1999, p. 56).

4.7.4 Summary of findings of Comparison Group 1 in the above three tests.

The marks in these tests are relatively low with only one student getting above 50% and this was in the Word Identification Test, CG1-S5. This student was the second highest scorer in the Word Attack Test and amongst the students that got a raw score of seven in the Spelling Test. The students in the lower range of raw scores in the Word Attack Test were also in the lower range in the Word Identification Test. According to Woodcock (1997) in the Word Attack test and the Word Identification test the students were in the minimum reading range of six years and eight months and the maximum according to the Word Attack test results was eight years one month and the Word Identification test eight years six months. According to Larsen et

al. (1999) these students are in the spelling age equivalents of six years three months to seven years three months.

At the end of the semester the Comparison Groups 1, 2 and 3 did the same tests as the Treatment Groups.

4.7.5 Analysis of Word Attack Test Results (End of Semester) – Comparison Group 1.

Two students were absent for this test. In the Word Attack Test the highest raw score was twenty-one (47%) by student CG1-S6. There were three students that got raw scores in the teens, CG1-S5 – seventeen (38%), CG1-S9 and CG1-S10 with thirteen (29%).Students CG1-S5 and CG1-S6 were in the top scorers at the beginning of the semester as well. The three remaining students had scores ranging from three (CG1-S3) to ten (22%) by students CG1-S4 and CG1-S8. These results would place these students in the reading age equivalent group of six years eleven months to eight years four months (Woodcock, 1997, p. 144). (See Appendix 45 for the Schedule of Results for this test and the Word Identification and Spelling Tests).

4.7.6 Analysis of Word Identification Test Results (End of Semester) – Comparison Group 1.

In the Word Identification Test the pattern of the raw scores being higher than the Word Attack test continued. The highest raw score was sixty-two (58%) by student CG1-S6, again in the top scorers, but the mark after this was considerably lower, in the forties by CG1-S10 with forty-seven (44%). Four more students had raw scores in the forties, and then the lowest raw scores were by Students CG1-S11 with thirty-nine (37%), CG1-S8 with thirty-six (34%) and CG1-S3 with six (6%). With raw scores in this range Woodcock (1997, p. 143) puts this group in the reading age minimum equivalent of six years seven months to a maximum of nine years four months. All, but one student would not be in the nine year level as apart from this student, the balance of the students received raw scores in the forties therefore, that would drop them to the maximum range of seven years eleven months.

4.7.7 Analysis of Spelling Test (End of Semester) Comparison Group 1.

The highest raw score in this test was seventeen (68%) by CG1-S10 with students CG1-S4, who was the lowest scorer in the test at the beginning of the semester, and

CG1-S5 both following with fourteen (56%). The middle range was two students, one with ten (40%) CG1-S7, and another with eleven (44%) was student CG1-S6, who was one of the top scorers in the first test. The lowest raw score was two (8%) by CG1-S3, who scored the lowest in all three tests, and then CG1-S9 with nine (36%) and student CG1-S11 with six (36%). According to Larson et al. (1999, p. 56), this puts this group at the end of the semester in the spelling age equivalent of below six years of age to nine years of age.

4.7.8   Summary of findings of Comparison Group 1 on the above three tests.

It would appear from the raw scores in these tests at the end of the semester that there is a change of three months in the age equivalents in the Word Attack test ratio, with the age equivalent moving slightly from six years eight months to six years eleven months in the minimum range and from eight years one month to eight years four months in the maximum range. In the Word Identification test the age equivalent dropped from six years eight months in the minimum range by one month and for the maximum of the class the maximum range decreased by seven months to seven years eleven months, but one student was at a maximum reading age equivalent of nine years four months (Woodcock 1997). The Spelling test raw scores indicate that at the end of the semester the minimum age equivalent dropped to below six years of age, but the maximum increased to nine years (Larson et al. 1999).

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4.7.9 Comparison of Word Attack/Word Identification/Spelling Tests (**Beginning and end of semester raw scores) Comparison Group 1.**

Table 15 below illustrates the differences in the raw scores of the above tests.

Key for colour code:

Blue – Improvement in score

Green – Remaining the same score

Yellow – Drop in score

Uncoloured – no comparison possible

Table 15 Raw Scores of Word Attack/Word Identification/Spelling Tests –

Comparison Group 1. 1st Test (Beginning of Semester) 2nd (Test End of Semester)

Student	Word Attack		Word Identification		Spelling	
	1st Test	2nd Test	1st Test	2nd Test	1st Test	2nd Test
1	12	a	43	a	10	a
2	5	a	43	a	a	a
3	1	3	7	6	7	2
4	13	10	45	43	6	14
5	15	17	54	44	7	14
6	13	21	49	62	8	11
7	19	9	45	44	7	10
8	4	10	35	36	7	a
9	7	13	40	41	a	9
10	12	13	42	47	7	17
11	11	15	43	39	7	8
Total	112	111	446	362	66	85

Unfortunately, no comparison can be made for the first two students of this group as they did not attend the second tests. Students CG1-S5 and CG1-S6 remained in the top scoring group in all of the tests. Two of the students, CG1-S6 and CG1-S10 improved in all the second tests at the end of the semester. Student CG1-S7, being the top scorer in the first Word Attack test dropped his raw scores in all of the tests. Student CG1-S3 was the lowest scorer in five of the tests and although he improved slightly in the second Word Attack test he dropped in all other raw scores.

For reference Table 16, below shows the raw scores in percentages.

Key for colour code:

Blue – Improvement in score

Green – Remaining the same score

Yellow – Drop in score

Uncoloured – no comparison possible

Table 16 shows the above raw scores in percentages.

Student	Word Attack		Word Identification		Spelling	
	1st Test	2nd Test	1st Test	2nd Test	1st Test	2nd Test
1	27	a	41	a	40	a
2	11	a	41	a	a	a
3	2	7	7	6	28	8
4	29	22	42	41	24	56
5	33	38	51	42	28	56
6	29	47	46	58	32	44
7	42	20	42	42	28	40
8	9	22	33	34	28	a
9	16	29	38	39	a	36
10	27	29	40	44	28	68
11	24	33	41	37	28	36
Total	249	247	422	343	264	344

From this table it can be seen that one student, CG1-S5, received above 50% in the first Word Identification test although he dropped his percentage in the Word Identification test the second time. The highest percentage obtained was by student CG1-S10, in the second spelling test (68%). Students CG1-S5 and CG1-S6 both got 56% in the second spelling test.

Collective percentages were taken from the first and second Word Attack, Word Identification and Spelling tests respectively and the two figures below indicate how the students' percentages changed between the first tests given at the beginning of the semester and the second tests at the end of the semester.

Figure 7 below illustrates the students' percentages in Comparison Group 1 for all three of the first tests. Figure 8 highlights the differences in the percentages obtained in the second tests by the students in the same three tests. It can be seen that in the Figure 8 some of the students have moved into the higher range of percentages.

10s, 1, 10% 90s, 0, 0% 70s, 0, 0% 60s, 0, 0% 40s, 0, 0%
80s, 0, 0% 50s, 0, 0%
20s, 2, 20% 0s, 0, 0%
30s, 7, 70%

■ 90s ■ 80s ■ 70s ■ 60s ■ 50s
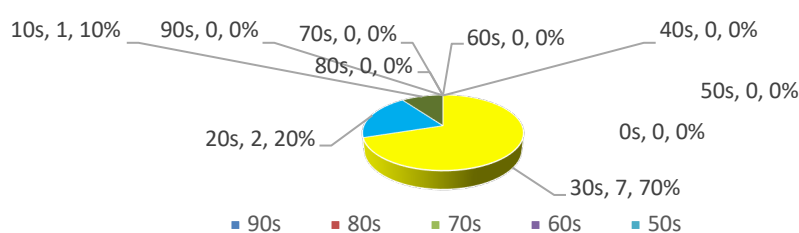
Figure 7 – Collective percentages obtained in Word Attack, Word Identification and Spelling – Comparison Group 1– First Tests.

0s, 1, 11% 80s, 0, 0% 70s, 0, 0%
90s, 0, 0% 60s, 0, 0%
10s, 0, 0% 50s, 1, 11%
20s, 1, 11%
30s, 3, 33% 40s, 3, 34%

■ 90s ■ 80s ■ 70s ■ 60s ■ 50s
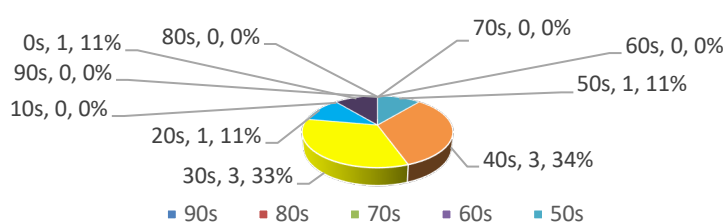
Figure 8 – Collective percentages obtained in Word Attack, Word Identification and Spelling – Comparison Group 1– Second Tests.

4.7.10 Analysis of Questionnaires on Comparison Group 1

There was a questionnaire completed at the beginning of the semester and not at the end of the semester as the questionnaire at the end of the semester completed by the treatment groups concerned the phonics instruction work covered during the semester. The students in this comparison group all had both their primary education and secondary education in a public school. Three of the students started to study English at the age of six and the balance of the class started to study English after the age of ten. All, but one of the students, had not studied phonics of any kind and although the majority of the students had younger siblings studying English, they were not aware of them studying phonics. They all felt that they were not able to match phonemes to graphemes and commented that should they have this knowledge it would help them in all the skills of English especially spelling and speaking.

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4.8   Analyses of Tests and Questionnaires on Comparison Group 2.

4.8.1   Analysis of Word Attack Test – (Beginning of Semester) Comparison Group 2.

There were twelve students in this class, but one student was absent for this test. The highest raw score in this test was eighteen (40%) by student CG2-S1. This score was followed by student CG2-S9 with fifteen (33%). These were the only students that received raw scores above ten; only two students CG2-S4 and CG2-S7 had raw scores above five with nine (20%) and seven (16%) respectively. The balance of the students received raw scores of five and under with the lowest score being zero by student CG2-S2. According to Woodcock (1997, p.149), these scores put the students in the reading age equivalent of five to eight years of age (See Appendix 46 for the Schedule of Results of the Word Attack, Word Identification and Spelling Tests).

4.8.2 Analysis of Word Identification Test (Beginning of Semester) Comparison Group 2.

The same student that was absent for the Word Attack test was absent for this test. The highest raw score was forty-nine (46%) by student CG2-S4 (scored nine in the Word Attack test), and this score was followed with a raw score of forty-eight (45%) by student CG2-S9, who was the second highest scorer in the Word Attack test with fifteen. Student CG2-S7 was the next highest scorer with forty-three (41%) and he was the fourth highest scorer in the Word Attack test with seven correct (16%). Then the next scores by two students, CG2-S1 (the student that scored the highest raw score of eighteen in the Word Attack test), and CG2-S5, who was actually one of the lower scorers in the Word Attack test (a raw score of two in the Word Attack test), with a raw score of forty-one (39%) each. Therefore, apart from one student, the top four scorers in the Word Identification test were also the top four scorers in the Word Attack test. The other raw scores were two in the thirties, two in the twenties and then two with nine and below, the lowest being five (5%). According to Woodcock (1997, p. 148), these scores put the group in the reading age equivalent of six years six months to just over eight years two months.

4.8.3   Analysis of Spelling Test (Beginning of Semester) Comparison Group 2.

There were no students absent for the first spelling test so out of the twelve students that wrote the test the highest score out of the twenty-five words was eleven (44%) by CG2-S9, who was the second highest scorer in the Word Attack and Word Identification tests.   The raw score then dropped to six by the student that was amongst the high scorers in the Word Identification test, but one of the lowest in the Word Attack test (CG2-S5).   One student scored five (20%), CG2-S5, and he was the highest scorer in the Word Identification test, and amongst the highest in the Word Attack test.   All other students scored below five with two of the students receiving a zero raw score.   These scores, according to Larsen et al. (1999, p. 56), put the students in the spelling age of below six to seven and a half years.

4.8.4   Summary of findings of Comparison Group 2 in the above three tests.

Similar to Comparison Group 1, the marks are relatively low with no students in this group achieving 50% in any of the three tests.   The highest percentage was 49%, also in the Word Identification test, as in Comparison Group 1, and this student, CG2-S4, was the third highest scorer in the Word Attack test and Spelling test. The students in the lowest range of scores in the Word Attack test were also in the lower range in the Word Identification test, with CG2-S2 being the lowest scorer in both tests with raw scores of zero in the first test and five in the second test.   Student CG2-S3, with four as a raw score in the Word Attack test scored nine in the Word Identification test, being the second lowest score. However, one student CG2-S5, had a raw score of two in the Word Attack test, and was the fourth highest scorer in the Word Identification test with a raw score of forty-one.   According to Woodcock (1997) these students are in the reading age equivalents of five to eight years (Word Attack raw scores) and six years six months to eight years two months (Word Identification raw scores).   According to Larson et al. (1999) they are at a spelling age equivalent of a minimum of below six years to a maximum of seven years and six months.   Therefore, they are lower than the minimum reading range equivalent of Comparison Group 1 according to the Word Attack scores and Word Identification scores.   They are also lower in the minimum range of the spelling equivalent, but in the maximum age equivalent they are three months higher.

4.8.5 Analysis of Word Attack Test Results (End of Semester) – Comparison Group 2.

One student was absent for this test so a total of eleven students did the test. The highest raw score was twenty-nine (64%) (CG2-S9), and he was the second highest scorer in the first test. In fact the top four scorers in the first Word Attack test are the top four scorers in this test with the following score from twenty-nine, being twenty-four (53%) by CG2-S1, twenty-two (49%) by CG2-S4, and twelve (27%) by CG2-S7. Apart from the top two scorers who have changed from first to second place in the second test the order of placing is the same. The lowest scorer in the second test is the same student that scored zero in the first test, CG2-S2, with three (7%). These results would place these students in the reading age equivalent group of six years eleven months to ten years five months (Woodcock, 1997, p. 144). The reason for the higher reading range would be because one student scored a raw score of twenty-nine bringing the age up to ten years five months, the following score of twenty-four brings the maximum reading age down to eight years ten months. In this class, apart from the one student with the high score (CG2-S9), all other students would not be above the eight year ten month equivalent reading range. This is the first group that there is such a difference in the students' reading age equivalent levels.

4.8.6 Analysis of Word Identification Test Results (End of Semester) – Comparison Group 2.

There was one student absent for this test so eleven students did the test. The highest raw score was sixty-eight (64%) by CG2-S9, who was the highest scorer in the Word Attack test. In fact the six highest scorers in this test are in the first six highest in the Word Attack test, albeit in different order. The raw scores following the above are CG2-S4 – fifty-two (49%), CG2-S1 – forty-eight (45%), CG2-S5 – forty-seven (44%), CG2-S7 – thirty-seven (35%) and CG2-S6 – thirty-seven (35%). Two more students had scores in the thirties followed by one student with twenty-three (22%) by CG2-S3, then the lowest raw score of 6 (6%) by CG2-S3, who had the lowest score in the second Word Attack test. These raw scores put the students in the reading age equivalent of six years seven months to ten years one month (Woodcock 1997, p. 143). Only the top student with the raw score of sixty-eight is in

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the ten year one month range, the score under this of fifty-two brings the rest of the students in the maximum range of eight years and four months.

4.8.7 Analysis of Spelling Test (End of Semester) Comparison Group 2.

All students were present for the spelling test so twelve students completed the test. The student that achieved the highest scores in all, but one of the tests done by this group, CG2-S9, spelt twenty-one (84%) of the twenty-five words given correctly. The next highest scores were fourteen (56%) by another top scorer CG2-S4, and eleven (44%) by CG2-S1, also another top scorer. The raw scores then dropped to nine (36%) by CG2-S5, and the rest of the students scored below nine with the lowest being three (12%) by CG2-S1 who has consistently been the lowest scorer. These scores, according to Larson et al. (1999, p. 56), put this group in the spelling age equivalent of below six to ten years. Looking at the second highest score of fourteen brings the majority of the group, apart from one student, into the maximum spelling age equivalent of eight years and three months.

4.8.8 Summary of findings of Comparison Group 2 on the above three tests.

From the raw scores and the age equivalent ratios it would appear that in the second Word Attack tests the lowest range moved up from five to six years eleven months. Only the top scorer in this group is in the maximum age group of ten years five months and the remainder of the students' raw scores place them in the minimum range of six years eleven months to a maximum of eight years and ten months. According to the Word Identification raw scores only one student is at the ten year one month maximum range and the balance of the students remain in the minimum range of six years seven months to eight years four months reading age equivalent (Woodcock 1997). The Spelling test raw scores indicate that apart from the one student, whose raw score places him at the ten year spelling age, the balance of the students remain at below six to eight years three months and improvement of nine months from the test at the beginning of the semester (Larson et al 1999).

4.8.9 Comparison of Word Attack/Word Identification/Spelling Tests (Beginning and end of semester raw scores) Comparison Group 2.

Table 17 below illustrates the differences in the raw scores of the above tests.

Key for colour code:

Blue – Improvement in score

Green – Remaining the same score

Yellow – Drop in score

Uncoloured – no comparison possible

Table 17 Raw Scores of Word Attack/Word Identification/Spelling Tests – Comparison Group 2. 1st Test (Beginning of Semester) 2nd (Test End of Semester)

Student	Word Attack		Word Identification		Spelling	
	1st Test	2nd Test	1st Test	2nd Test	1st Test	2nd Test
1	18	24	41	48	4	11
2	0	3	5	6	1	3
3	4	8	9	23	0	5
4	9	22	49	52	5	14
5	2	8	41	47	6	9
6	4	9	31	37	4	6
7	7	12	43	42	a	7
8	1	9	29	38	2	2
9	15	29	48	68	11	21
10	5	a	38	a	2	7
11	5	8	26	30	0	3
12	a	8	a	36	4	5
Total	70	140	360	427	39	93

Although there are a few students where no comparison can be made because of absenteeism, it can clearly be seen from the table above that the majority of students showed improvement in all three tests. Only one student dropped in raw scores in the Word Identification test and that was a minimal drop and one student showed no improvement in the spelling test. Student CG2-S9 almost doubled his raw score in the second Word Attack test, more than doubled his raw score in the Word Identification test, and almost doubled his raw score in the Spelling test. In the Word Attack test four students more than doubled their raw scores, two almost doubled their raw scores and one student doubled his score. All students showed an

improvement in their raw scores. In the Word Identification second test all students showed an improvement in their raw scores, but only one student more than doubled his raw score from nine to twenty-three (CG2-S3). The second best improvement is by CG2-S9 who improved his raw score by twenty from forty-eight to sixty-eight. The other students improved their raw scores by adding one to nine correct answers. In the second Spelling test three students more than doubled their first scores and one student almost doubled his first score. The other students added from one to five correct answers to their scores.

Key for colour code:

Blue – Improvement in score

Green – Remaining the same score

Yellow – Drop in score

Uncoloured – no comparison possible

Table 18 shows the above raw scores in percentages

Student	Word Attack		Word Identification		Spelling	
	1st Test	2nd Test	1st Test	2nd Test	1st Test	2nd Test
1	40	53	39	45	16	44
2	0	7	5	6	4	12
3	9	18	8	22	0	20
4	20	49	46	49	20	56
5	4	18	39	44	24	36
6	9	20	29	35	16	24
7	16	27	41	40	a	28
8	2	20	27	36	8	8
9	33	64	45	64	44	84
10	11	a	36	a	8	28
11	11	18	25	28	0	12
12	a	18	a	34	16	20
Total	155	312	340	403	156	372

The highest percentages were by CG2-S9 in the second tests being 64% in the Word Attack test and the Word Identification test and 84% in the Spelling test. No other students in any of the groups have scored this percentage in the Spelling test. There is not another student in this group in the 60% to 80% range, with the next highest

percentage being 56% by CG2-S4 in the second Spelling test. Apart from one student getting 53% in the second Word Attack test (CG2-S1), all other students had percentages from 49% downwards in all other tests.

From this table it can be seen that one student, CG1-S5, received above 50% in the first Word Identification test although he dropped his percentage in the Word Identification test the second time. The highest percentage obtained was by student CG1-S10, in the second spelling test (68%). Students CG1-S5 and CG1-S6 both got 56% in the second spelling test (See Appendix 47 for all test results for Comparison Group 2).

Collective percentages were taken from the first and second Word Attack, Word Identification and Spelling tests respectively and the two figures below indicate how the students' percentages changed between the first tests given at the beginning of the semester and the second tests at the end of the semester.

Figure 9 below illustrates the students' percentages in Comparison Group 2 for all three tests. Figure 10 highlights the differences in the percentages obtained in the second tests by the students in the same three tests. It can be seen that in the Figure 10 some of the students have moved into the higher range of percentages.
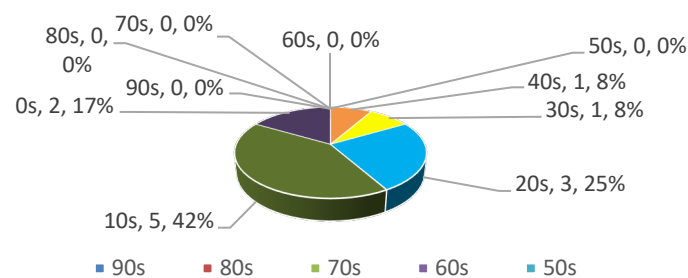
Figure 9 – Collective percentages obtained in Word Attack, Word Identification and Spelling – Comparison Group 2– First Tests.
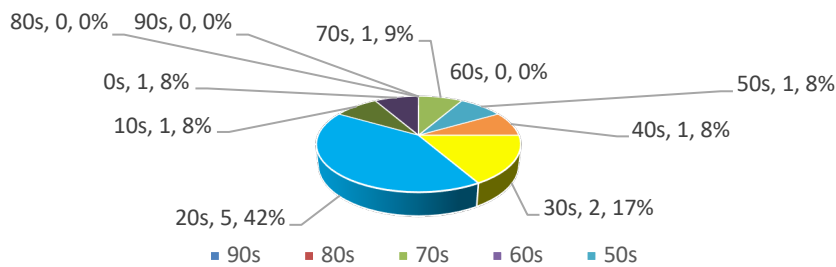
Figure 10 – Collective percentages obtained in Word Attack, Word Identification and Spelling – Comparison Group 2– Second Tests.

4.8.10 Analysis of Questionnaires on Comparison Group 2.

Twelve students completed the questionnaire at the beginning of the semester. All twelve students were between the ages seventeen to nineteen. All but one student had their primary school education in public schools, however all twelve students had their education in public schools. Two of the students started studying English at the age of four and another five at ten and under, with five starting to study English at sixteen and above. So apart from five students, most of the students were studying English from a young age. Four of the students confirm they studied phonics, although all the students stated they could not match phonemes to graphemes. All, but one, of the students responded that they cannot match phonemes to letters. The majority of the students felt that if they received phonics instruction it would help them in writing and reading, although all areas were highlighted as improving with phonics instruction with listening being the least highlighted.

4.9   Analyses of Tests and Questionnaires on Comparison Group 3.

There were eleven students in Comparison Group 3.

4.9.1   Analysis of Word Attack Test – (Beginning of Semester) Comparison Group 3.

There were eleven students in Comparison Group 3 and no students were absent for the test. The highest raw score was twenty-six (58%) by student CG3 -S2 and this was followed by one student scoring nineteen (42% - CG3-S9), and thereafter, two students scoring eighteen (40%); CG3-S7 and CG3-S11. The next lowest scores were fourteen (31%) by two students, CG3-S5 and CG3-S9. The following five

students scored ten and under with the lowest score being seven (16%) by two students CG3-S1 and CG3-S6. According to Woodcock (1997, p. 149) these scores put the students in the reading age equivalent of seven years three months to nine years three months (See Appendix 48 for the Schedule of Results of the Word Attack, Word Identification and Spelling Tests).

4.9.2 Analysis of Word Identification Test (Beginning of Semester) Comparison Group 3.

There were no students absent for this test. The highest scorer in this test was the same student that scored the highest in the Word Attack test, CG3-S2, with a raw score of fifty-four (51%). This student is the only student above fifty as following that score is fifty (47%) by student CG3-S7, also one of the top scorers in the Word Attack test. This was followed by another top scorer in the Word Attack test, student CG3-S9, with forty-nine (46%) and then student CG3-S3, who was one of the lower scorers in the Word Attack test with forty-eight (45%). There were two more students who scored in the forties and then five students scored in the thirties with the lowest score being thirty-four (32%) by three students CG3-SS4, 5, and 6. The lowest score in the Word Attack test, CG3 S1, had a score of thirty-five (33%). According to Woodcock (1997, p. 148), these scores put the group in the reading age equivalent of seven years five months to eight years six months.

4.9.3 Analysis of Spelling Test (Beginning of Semester) Comparison Group 3.

The whole class was present for this test. The same highest scorer in both the Word Attack test and the Word Identification test scored the highest in the Spelling test, CG3-S2; with eleven out of the twenty-five words correct (44%). This score was followed by student CG3-S3, also a top scorer in other tests, with ten (40%). The next scores of nine (36%) were by students CG3-S9 and S11, also amongst the top four scorers in the two previously discussed tests. The next six students scored between eight (32%), CG3-S10, and the lowest raw score of two (8%) by CG3-S1, the student who had the lowest score in the Word Attack test and was one of the second lowest scorers in the Word Identification test. These scores, according to Larson et al. (1999, p. 56), put the students in the spelling age of below six years to seven years six months.

4.9.4   Summary of findings of Comparison Group 3 in the above three tests.

Apart from one student, CG3-S2, the highest scorer in all three tests, who got 58% in the Word Attack test and 51% in the Word Identification test, no other students were in the 50% range and above. Students CG3-S2, 8, 9, 11, are amongst the top scorers in all three tests. Student CG3-S5 is amongst the top four scorers in the Word Attack test, but in the lower scores in the other two tests. Student CG3-S7, although, in the top four scorers in the Word Attack test and Word Identification test, is one of the lower scorers in the Spelling test. Student CG3-S3 is amongst the top scores in the Word Identification test and Spelling test, but low in the Word Attack test. The Word Attack raw scores put the group in a maximum reading age equivalent slightly older (seven years and three months to nine years and three months) than the Word Identification scores (seven years and five months to eight years and six months) (Woodcock 1997), but two months younger at the minimum age equivalent. According to Larson et al. (1999) the group's spelling age equivalent is below six years to a maximum of seven years six months.

4.9.5   Analysis of Word Attack Test Results (End of Semester) – Comparison Group 3.

There were no students absent for this test. The highest raw score was achieved by the same student that had the highest score in the first test, CG3-S2 with twenty-five (56%). The raw score then drops into the teens with student CG3-S9, who was also a high scorer in the first test, with fourteen (31%). Following these scores are CG2-S11 with twelve (27%), and two students with eleven (24%), CG3-S7 and CG3-S8. The raw scores then drop to ten and below for the next six students with the lowest raw score of seven (16%) by two students, CG3-S1 and CG3-S4. These raw scores place the students in the reading age equivalent of seven years three months to nine years and one month. This range is the same minimum range they were in at the beginning of the semester, however, the maximum age has dropped by two months (Woodcock, 1997, p. 144) (See Appendix 49 for the Schedule of Results of the Word Attack, Word Identification and Spelling Tests).

4.9.6   Analysis of Word Identification Test Results (End of Semester) – Comparison Group 3.

All students were present for this test. Student CG3-S2 was again the highest scorer with a raw score of fifty-seven (54%), and the only student to score in the fifties.

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Student CG3-S10 followed with a raw score of forty-nine (46%) and close to this score was student CG3-S11 with forty-eight (45%). There were three more students with raw scores in the forties, CG3-S7 and CG3-S9 with forty-seven (44%) and CG3-S3 with forty-one (54%). There were three students with raw scores in the thirties and the lowest was thirty-three (31%) by student CG3-S5. These raw scores put the students in the reading age equivalent of seven years three months to eight years and ten months according to Woodcock, (1997, p. 143). There is a slight drop in the minimum age by two months, but an increase in the maximum age by four months according to the raw scores of the first Word Identification test.

4.9.7   Analysis of Spelling Test (End of Semester) Comparison Group 3.

The highest raw score in this test, which was done by all students, is twelve (48%) by student CG3-S11.   This student has been a high scorer in all the three tests discussed above, and his raw score is followed by student CG3-S2 with eleven (44%) who has been the top scorer in the Word Attack test and the Word Identification test.   Students CG3-S3, 9 and 10 all scored ten (40%) and three students scored nine (36%), CG3-SS4, 5 and 7. The lowest score in this test was two (8%) by student CG3-S8. According to Larson et al. (1999, p.56) these raw scores put the students in the spelling age equivalent of below six years of age to 7 years nine months, an improvement of three months since the beginning of the semester.

4.9.8   Summary of finding of Comparison Group 3 on the above three tests.

According to the Word Attack raw scores the reading minimum range did not change from the beginning of the semester to the end of the semester. However, the maximum reading age equivalent decreased by two months from nine years three months to nine years one month. The results of the Word Identification raw scores showed the group decreased in the minimum reading age from seven years five months at the beginning of the semester to seven years three months at the end of the semester, however the maximum reading age equivalent rose by four months to eight years ten months. The spelling age equivalent remained the same in the minimum range at below six years of age, but increased in the maximum range by three months (Woodcock 1997; Larson et al. 1999).

4.9.9 Comparison of Word Attack/Word Identification/Spelling Tests (Beginning and end of semester raw scores) Comparison Group 3.

Key for colour code:

Blue – Improvement in score

Green – Remaining the same score

Yellow – Drop in score

Uncoloured – no comparison possible

Table 19 Raw Scores of Word Attack/Word Identification/Spelling Tests –
Comparison Group 3. 1st Test (Beginning of Semester) 2nd (Test End of Semester)

Student	Word Attack		Word Identification		Spelling	
	1st Test	2nd Test	1st Test	2nd Test	1st Test	2nd Test
1	7	7	35	34	2	5
2	26	25	54	54	11	11
3	9	10	48	39	10	10
4	10	7	34	34	4	9
5	14	8	34	31	6	9
6	7	8	34	26	3	10
7	18	11	50	44	5	9
8	12	11	41	38	5	2
9	14	14	49	44	9	10
10	19	8	36	46	8	10
11	18	12	47	45	9	12
Total	154	121	462	435	72	97

In this group the majority of students in the second Word Attack test and the second Word Identification test dropped in their raw scores, the highest drop being seven marks. Only two students improved their raw scores in the Word Attack test and the improvement was only one mark in both cases. The student with the highest raw scores in the first test and second test, CG3-S2, with twenty-six in the first test dropped in score in the second Word Attack test to twenty-five, but was still the highest scorer. In the Word Identification test only one student improved his raw score and this was from thirty six to forty six (ten marks). Other than that two students' marks remained the same, and eight of the eleven students dropped in their raw mark score. The highest drop in raw score was nine marks - CG3-S3, and

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there was also a student, CG3-S6, that dropped by eight marks. The other students in the group that dropped in their raw scores dropped from two to six marks. In the Spelling test most of the students improved their raw scores, two students marks remained the same and one student dropped in score. The most improved score was by student CG3-S6, from three to ten, so although this student's raw score dropped in the Word Identification test, he improved in the Spelling test. The other students' scores improved in raw score by two to five marks.

Key for colour code:

Blue – Improvement in score

Green – Remaining the same score

Yellow – Drop in score

Uncoloured – no comparison possible

Table 20 shows the above raw scores in percentages

Student	Word Attack		Word Identification		Spelling	
	1st Test	2nd Test	1st Test	2nd Test	1st Test	2nd Test
1	16	16	33	34	8	20
2	58	56	51	54	44	44
3	20	22	45	39	40	40
4	22	16	32	34	16	36
5	31	18	32	31	24	36
6	16	18	32	26	12	40
7	40	24	47	44	20	36
8	27	24	39	38	20	8
9	31	31	46	44	36	40
10	42	18	34	46	32	40
11	40	27	44	45	36	48
Total	343	270	435	435	288	388

The highest percentages were by one student in the first and second Word Attack tests and Word Identification tests, CG3-S2, with 58% in the first Word Attack test and dropping to 56% in the second, and 51% in the first Word Identification test and improving that percentage to 54% in the second Word Identification test. In the Spelling test, this student had the highest percentage out of all the students of 44% in both tests. There were no other percentages in the fifties across all six tests, with the

other students scoring in the forties, thirties, twenties with the lowest percentage being two students with 8%, CG3-S1 in the first Spelling test and CG3-S8 in the second Spelling test.

Collective percentages were taken from the first and second Word Attack, Word Identification and Spelling tests respectively and the two figures below indicate how the students' percentages changed between the first tests given at the beginning of the semester and the second tests at the end of the semester.

Figure 11 below illustrates the students' percentages in Comparison Group 3 for all three tests.

Figure 12 highlights the differences in the percentages obtained in the second tests done by the students. It can be seen that in the Figure 12 some of the students have moved into the higher range of percentages.
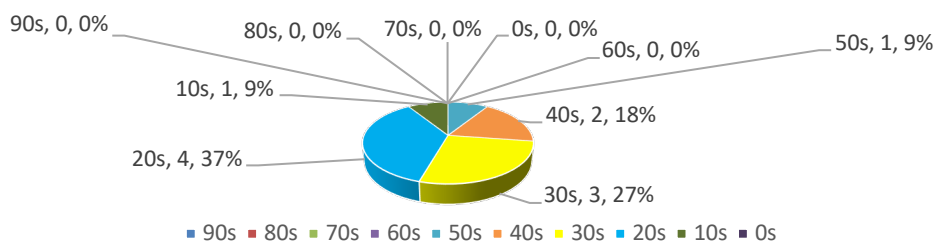
Figure 11 – Collective percentages obtained in Word Attack, Word Identification and Spelling – Comparison Group 3– First Tests.
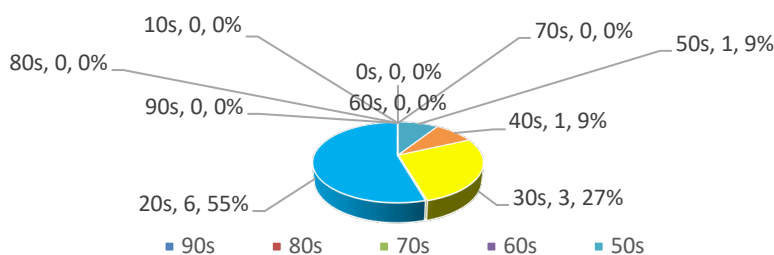
Figure 12 – Collective percentages obtained in Word Attack, Word Identification and Spelling – Comparison Group 3– Second Tests.

4.9.10 Analysis of Questionnaires on Comparison Group 3.

The majority of the students in this group range in age from seventeen to nineteen with five students above the age of twenty. Although, fourteen students filled in the questionnaire, only eleven students were eventually in this class. There is no way of knowing the age of the students who stayed in the class. The majority of the students had their primary and secondary school education in public schools. Six of the students started to study English at the age of sixteen and above and the balance of the students started studying English from seven to ten years of age. Only two of the students said they had learned to match phonemes to graphemes, and none of the students knew how to match phonemes to graphemes of more than one letter. Apart from two students who confirmed their siblings are learning English in a different way to the way they learned, none of the other students have taken notice of how their siblings are learning English. All the students responded that they cannot match phonemes to graphemes, but they felt that if they had phonics instruction it would help in all the areas, reading, spelling, vocabulary, writing, listening and speaking.

4.10 Tables and discussions illustrating the total raw scores of Word Attack, Word Identification and Spelling Tests in Comparison Groups 1, 2 and 3.

4.10.1 Illustration tables and discussion of Word Attack Tests, in Comparison Groups 1, 2 and 3.

Key for colour code:

Blue – Improvement in score

Green – Remaining the same score

Yellow – Drop in score

Uncoloured – no comparison possible

Table 21 Word Attack Test Results for Comparison Group 1, 2 and 3 - Test 1 and Test 2.

	Word Attack Test 1			Word Attack Test 2		
Student	CG1	CG2	CG3	CG1	CG2	CG3
1	12	18	7	a	24	7
2	5	0	26	a	3	25
3	1	4	9	3	8	10
4	13	9	10	10	22	7
5	15	2	14	17	8	8
6	13	4	7	21	9	8
7	19	7	18	9	12	11
8	4	1	12	10	9	11
9	7	15	14	13	29	14
10	12	5	19	13	a	8
11	11	5	18	15	8	12
12		a			8	
Total	112	70	154	111	140	121

Table 21 illustrates all the raw score results of the three comparison groups in the Word Attack tests at the beginning and end of semester. The highlighted areas indicate the students that increased (blue), remained the same (green) and decreased (yellow) in their raw scores. In the comparison group classes it is possible to look at the raw scores of thirty students as they were present for both tests. Nineteen of the thirty students improved on their raw scores with the highest raw score being twenty-five in CG3, even though this student dropped his raw score by one from the first test. There were two other students who increased their raw

scores in this group, with another two keeping the same raw score between the first and second test and the balance of seven students in CG3 decreasing in their raw scores. The next highest raw score was twenty-four in CG2. In this group all ten students that were present for the second test increased their raw scores. Nine students did the second test in CG1 and seven of these students increased their raw scores, the other two decreased in their raw scores. Therefore, out of the total of thirty students in the comparison groups nineteen students increased their raw, scores, nine students decreased their raw scores and two students kept the same score.

4.10.2 Illustration tables and discussion of Word Identification Tests, in Comparison Groups 1, 2 and 3.

Key for colour code:

Blue – Improvement in score

Green – Remaining the same score

Yellow – Drop in score

Uncoloured – no comparison possible

Table 22 Word Identification Test Results for Comparison Group 1, 2 and 3 - Test 1 and Test 2.

	Word Identification Test 1			Word Identification Test 2		
Student	CG1	CG2	CG3	CG1	CG2	CG3
1	43	41	35	a	48	34
2	43	5	54	a	6	54
3	7	9	48	6	23	39
4	45	49	34	43	52	34
5	54	41	34	44	47	31
6	49	31	34	62	37	26
7	45	43	50	44	42	44
8	35	29	41	36	38	38
9	40	48	49	41	68	44
10	42	38	36	47	a	46
11	43	26	47	39	30	45
12		a			36	
Total	446	360	462	362	427	435

The same thirty students did the second Word Identification tests. The difference being in this test was that fourteen students increased their raw scores and fourteen

students decreased in their raw scores. Two students, including the one with the highest raw score of fifty-four kept the same raw score. The similarity is that in the second test for CG1 the total raw score decreased as it did in the Word Attack test; for CG2 the total number increased as it did in the Word Attack test, and for CG3 the total raw score decreased as it did in the Word Attack test.

4.10.3 Illustration tables and discussion of Spelling Tests, in Comparison Groups 1, 2 and 3.

Key for colour code:

Blue – Improvement in score

Green – Remaining the same score

Yellow – Drop in score

Uncoloured – no comparison possible

Table 23 Spelling Test Results for Comparison Group 1, 2 and 3 - Test 1 and Test 2.

Student	Spelling Test 1			Spelling Test 2		
	CG1	CG2	CG3	CG1	CG2	CG3
1	10	4	2	a	11	5
2	a	1	11	a	3	11
3	7	0	10	2	5	10
4	6	5	4	14	14	9
5	7	6	6	14	9	9
6	8	4	3	11	6	10
7	7	a	5	10	7	9
8	7	2	5	a	2	2
9	a	11	9	9	21	10
10	7	2	8	17	7	10
11	7	0	9	8	3	12
12		4			5	
Total	66	39	72	85	93	97

In these tests it was possible to compare twenty-nine students' raw scores. Twenty-four students improved their raw scores in the second Spelling test with two students decreasing in raw scores and three remaining the same. In all three tests the total number of raw scores improved by all three groups. In the first tests the highest raw score was eleven, but in the second tests the highest raw score almost doubled at twenty-one. Whereas only one two students had a raw score of above ten across all three comparison groups in the first test, there were fourteen students that achieved

raw scores of ten and above in the second tests. Therefore, it can be seen that the majority of students increased their raw spelling scores.

4.11 Comparison of Treatment Groups results to Comparison Groups results of all tests given at the beginning and end of semester

For the comparison of the treatment groups and comparison groups Table 24 illustrates the raw scores of the first Word Attack test which should give an idea as to how homogenous the groups are. Then, Table 25 will illustrate the second raw scores with the difference in raw scores for each individual student indicated in a separate column next to the raw scores, whether it be a decrease in score or an increase. This should highlight the amount the raw scores increased or decreased.

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4.11.1 Word Attack Test Results for Treatment Groups and Comparison Groups – Test 1 (Beginning of Semester).

The table below (Table 24) illustrates the raw scores of the tests given to the three treatment groups and the three comparison groups at the beginning of the semester (Test 1).

Table 24 Word Attack Test Results for TG 1, 2, 3 and CG1, 2 3 - Test 1.

Student	Word Attack TG Test 1			Word Attack CG Test 1		
	TG1	TG2	TG3	CG1	CG2	CG3
1	15	10	4	12	18	7
2	4	17	3	5	0	26
3	11	a	5	1	4	9
4	8	13	16	13	9	10
5	16	4	15	15	2	14
6	8	7	a	13	4	7
7	6	5	6	19	7	18
8	19	8	8	4	1	12
9	15	3	12	7	15	14
10	7	16	7	12	5	19
11	9	12	2	11	5	18
12	6	11	a		a	
13	0	4	a			
14	5	a	8			
15	4	a	10			
16	7	13	12			
17	5	7				
18	6	8				
19	a					
20	5					
Total	156	138	108	112	70	154

There are fewer students in the comparison groups, but Table 24 illustrates the maximum and minimum raw scores for both the treatment groups and the comparison groups.

4.11.2 Word Attack Test Results for Treatment Groups and Comparison Groups – Test 2 (End of Semester)

Table 25 illustrates the raw scores of the three treatment groups and the comparison groups in the Word Attack tests given at the end of the semester.

Key for colour code:

Blue – Improvement in score

Green – Remaining the same score

Yellow – Drop in score

Uncoloured – no comparison possible

Table 25 Word Attack Test Results for TG 1, 2, 3 and CG1, 2 3 - Test 2.

Student	Word Attack TG Test 2						Word Attack CG Test 2					
	TG1		TG2		TG3		CG1		CG2		CG3	
	RS	D	RS	D	RS	D	RS	D	RS	D	RS	D
1	24	+9	a		9	+5	a		24	+6	7	0
2	3	-1	10	-7	6	+3	a		3	+3	25	-1
3	22	+11	13		a		3	+2	8	+4	10	+1
4	9	-1	21	+8	13	-3	10	-3	22	+13	7	-3
5	16	0	5	+1	10	-5	17	+2	8	+6	8	-6
6	14	+6	12	+5	6		21	+8	9	+5	8	+1
7	15	+9	5	0	8	+2	9	-10	12	+5	11	-7
8	23	+4	12	+4	17	+9	10	+6	9	+7	11	-1
9	18	+3	9	+6	11	-1	13	+6	29	+14	14	0
10	20	+13	a		10	+3	13	+1	a		8	-11
11	a		14	+2	8	+6	15	+4	8	+3	12	-6
12	5	-1	25	+14	10				8			
13	a		11	+7	11							
14	11	+6	5		11	+3						
15	8	+4	5		14	+4						
16	a		17	+4	23	+11						
17	17	+12	17	+10								
18	11	+5	10	+2								
19	10											
20	18	+13										
Total	244	+88	191	+53	167	+59	111	-1	140	70	121	-33

The columns under the group indicate the raw scores (RS) and the difference in each individual student's raw score is indicated under the column headed D. The colours in the columns indicate the same as they have in all the previous tables, therefore in the D column if the square is highlighted blue the figure would indicate how much the

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student's raw score has increased, and if it is yellow, the figure would be an indication of how much the raw score has decreased. Green has no figure in it as the student's raw score has remained the same.

The following illustrations were taken from the above tables to show the comparison of the Treatment Groups with the Comparison Groups. A combined average was taken from the results of the Word Attack Tests shown on Table 25 above done by Treatment Group 1 and Comparison Group 1. Below Figures 13 and 14 illustrate the rate the students improved, remained the same or dropped in the respective groups.
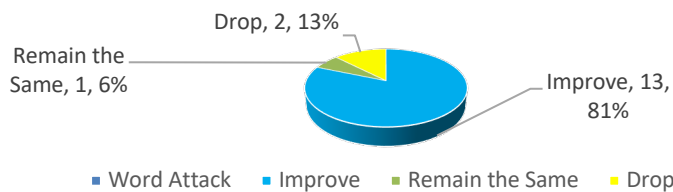
Figure 13 – Word Attack Results Treatment Group 1
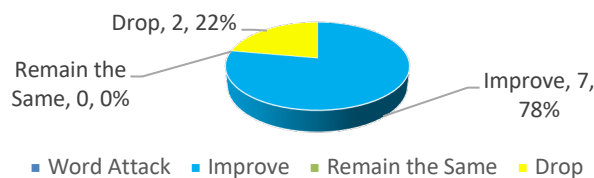
Figure 14– Word Attack Results Comparison Group 1

It can be seen in the above illustrations that the improvement rate in Treatment Group 1 is higher than Comparison Group 1 with 81% of students improving in Treatment Group 1 and 78% in Comparison Group 1. The percentage of students dropping their score in Comparison Group 1 is higher than Treatment Group 1 with the percentages being 13% and 22% respectively.

Figures 15 and 16 show the Word Attack results from Treatment Group 2 and Comparison Group 2 respectively. These figures illustrate the rate the students improved, remained the same or dropped in the respective groups.

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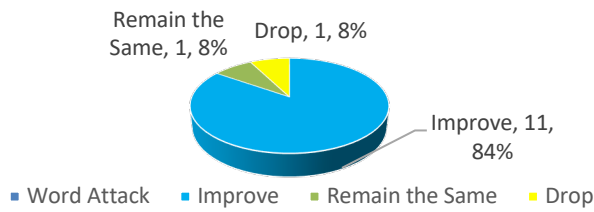
Figure 15 – Word Attack Results Treatment Group 2
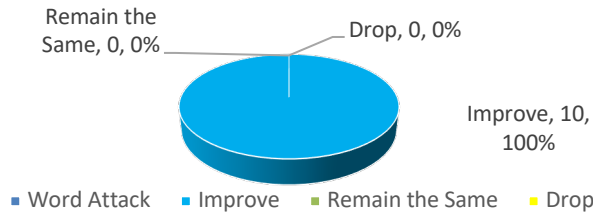
Figure 16 – Word Attack Results Comparison Group 2

It can be seen from the above illustrations that Treatment Group 2 had a collective rate of 84% improvement and Comparison Group 2 had an improvement rate of 100%.

Figures 17 and 18 show the Word Attack results from Treatment Group 3 and Comparison Group 3 respectively. These figures illustrate the rate the students improved, remained the same or dropped in the respective groups.
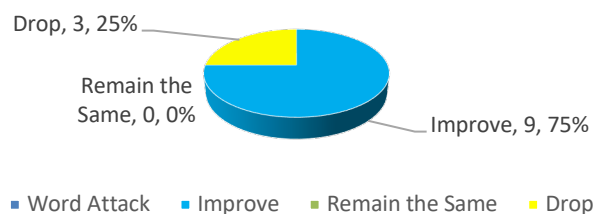
Figure 17 – Word Attack Results Treatment Group 3
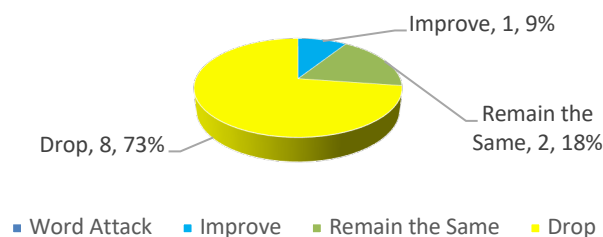
Figure 18 – Word Attack Results Comparison Group 3

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The above illustrations show that Treatment Group 3 had an improvement rate of 75%, and Comparison Group 3 had an improvement rate of 9%. Comparison Group 3 had a rate of dropping at 73% in comparison to a rate of 25% in Treatment Group 3.

4.11.3 Word Identification Test Results for Treatment Groups and Comparison Groups – Test 1 (Beginning of Semester).

The table below illustrates the raw scores of students in the above groups for the first Word Identification test given at the beginning of the semester.

Table 26 Word Identification Test Results for TG 1, 2, 3 and CG1, 2 3 - Test 1

Student	Word Identification TG Test 1			Word Identification CG Test 1		
	TG1	TG2	TG3	CG1	CG2	CG3
1	43	28	37	43	41	35
2	25	54	33	43	5	54
3	37	a	29	7	9	48
4	30	38	44	45	49	34
5	54	28	47	54	41	34
6	46	40	a	49	31	34
7	47	27	40	45	43	50
8	46	43	41	35	29	41
9	37	17	33	40	48	49
10	46	39	39	42	38	36
11	33	47	21	43	26	47
12	29	44	a		a	
13	5	30	a			
14	36	a	22			
15	26	a	44			
16	37	36	42			
17	37	46				
18	27	35				
19	a					
20	43					
Total	684	552	472	446	360	462

Table 26 indicates the extent to which the scores show the groups as being homogenous.

4.11.4 Word Identification Test Results for Treatment Groups and Comparison Groups – Test 2 (End of Semester).

The table below illustrates the raw scores of the Word Identification tests given at the end of the semester and shows how the individual student's raw scores have decreased, increased or remained the same.

Key for colour code:

Blue – Improvement in score

Green – Remaining the same score

Yellow – Drop in score

Uncoloured – no comparison possible

Table 27 Word Identification Test Results for TG 1, 2, 3 and CG1, 2 3 - Test 2.

Student	Word Identification TG Test 2						Word Identification CG Test 2					
	TG1		TG2		TG3		CG1		CG2		CG3	
	RS	D	RS	D	RS	D	RS	D	RS	D	RS	D
1	49	+6	a		40	+3	a		48	+7	34	-1
2	33	+8	45	-9	33	0	a		6	+1	54	0
3	45	+8	48		a		6	-1	23	+14	39	-9
4	26	-4	37	-1	44	0	43	-2	52	+3	34	0
5	44	-10	34	+6	44	-3	44	-10	47	+6	31	-3
6	42	-4	44	+	42		62	+13	37	+6	26	-8
7	47	0	33	+6	46	+6	44	-1	42	-1	44	-6
8	44	-2	41	-2	44	+3	36	+1	38	+9	38	-3
9	40	+3	33	+16	37	+4	41	+1	68	+20	44	-5
10	57	+11	a		42	+3	47	+5	a		46	+10
11	a		38	-9	18	-3	39	-4	30	+4	45	-2
12	29	0	48	+4	45				36			
13	a		34	+4	40							
14	39	+3	30		42	+18						
15	35	+9	26		38	-6						
16	37	0	40	+4	46	+4						
17	49	+12	51	+5								
18	29	+2	36	+1								
19	41											
20	48	+5										
Total	724	+40	618	+66	601	+129	362	-84	427	+67	435	-27

The individual student's raw scores are listed under the column labelled (RS) with the differences, or none, in the raw scores listed under the column D.   As in tables

discussed previously, the colour coding indicates whether the numbers indicate an increase, decrease or no change.

As was illustrated with the word attack tests the figures below further illustrate the rate the students improved, remained the same or dropped taken from Table 27 above. The figures look at the three word identification tests the students did in their respective groups.
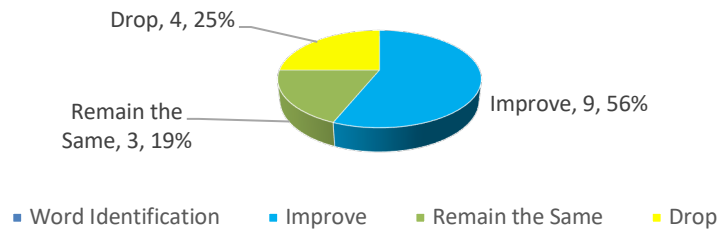
Figure 19 – Word Identification Results Treatment Group 1
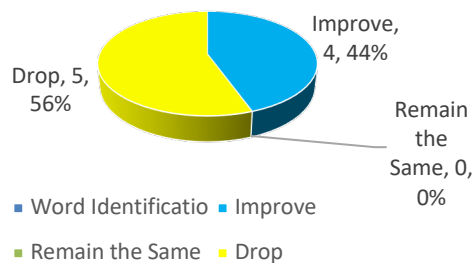
Figure 20– Word Identification Results Comparison Group 1

The above illustrations show a higher improvement rate in Treatment Group 1 with 56% of the students improving whilst in Comparison Group 1 the percentage of improvement was 44%. Percentages of students dropping is double in Comparison Group 1 with over 50% of the students dropping.

Figures 21 and 22 below illustrate the Word Identifications results for Treatment Group 2 and Comparison Group 2.
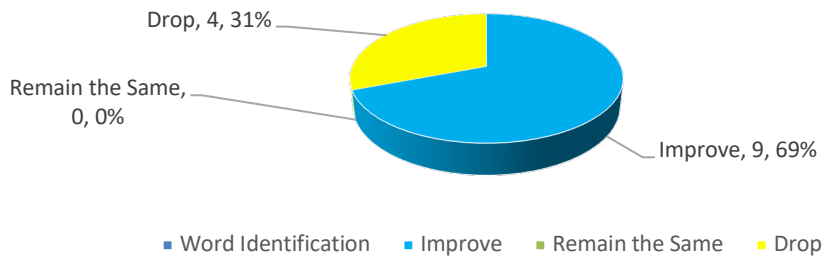
Figure 21 – Word Identification Results Treatment Group 2
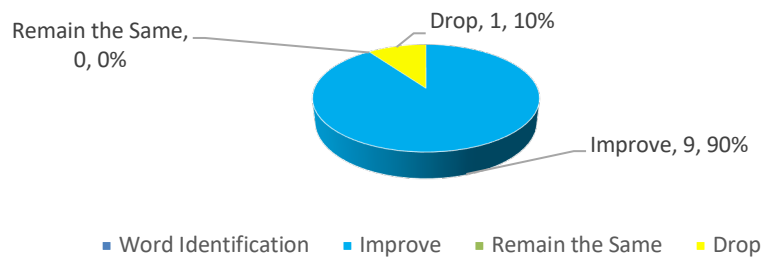
Figure 22 – Word Identification Results Comparison Group 2

It can be seen from the above illustrations that similar to the word attack results, Comparison Group 2 has a high rate of improvement at 90%. The improvement rate of Treatment Group 2 is 69%.

Figures 23 and 24 below illustrate the Word Identifications results for Treatment Group 3 and Comparison Group 3.
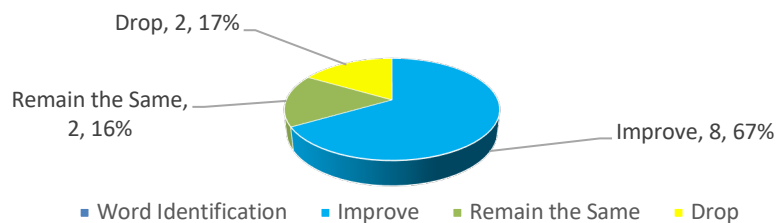
Figure 23 – Word Identification Results Treatment Group 3

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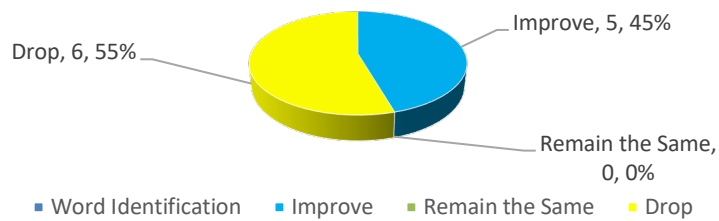
Figure 24 – Word Identification Results Comparison Group 3

These two illustrations highlight the differences in the rate of improvement with Treatment Group 3 and Comparison Group 3 showing 67% and 45% respectively. The rate of percentages dropping is 17% and 55% respectively.

4.11.5 Spelling Test Results for Treatment Groups and Comparison Groups – Test 1 (Beginning of Semester).

Table 28 Spelling Test Results for TG 1, 2, 3 and CG1, 2 3 - Test 1

Student	Word Spelling TG Test 1			Word Spelling CG Test 1		
	TG1	TG2	TG3	CG1	CG2	CG3
1	3	0	3	10	4	2
2	4	7	4	a	1	11
3	7	4	6	7	0	10
4	1	7	6	6	5	4
5	3	3	9	7	6	6
6	5	5	a	8	4	3
7	6	a	3	7	a	5
8	3	4	4	7	2	5
9	3	7	2	a	11	9
10	4	5	7	7	2	8
11	2	7	1	7	0	9
12	1	7	a		4	
13	1	2	a			
14	4	3	6			
15	3	4	5			
16	4	2	7			
17	a	7				
18	1	5				
19	6					
20	3					
Total	64	79	63	66	39	72

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The similarity of the raw scores across the six groups illustrated in Table 28 above indicates the groups as being homogenous.

4.11.6 Spelling Test Results for Treatment Groups and Comparison Groups – Test 2 (End of Semester).

Key for colour code:

Blue – Improvement in score

Green – Remaining the same score

Yellow – Drop in score

Uncoloured – no comparison possible

Table 29 Spelling Test Results for TG 1, 2, 3 and CG1, 2 3 - Test 2.

Student	Word Spelling TG Test 2						Word Spelling CG Test 2					
	TG1		TG2		TG3		CG1		CG2		CG3	
	RS	D	RS	D	RS	D	RS	D	RS	D	RS	D
1	7	+4	9	+9	10	+7	a		11	+7	5	+3
2	6	+2	a		6	+2	a		3	+2	11	0
3	12	+5	11	+7	8	+2	2	-5	5	+5	10	0
4	6	+5	8	+1	11	+5	14	+8	14	+9	9	+5
5	9	+6	10	+7	16	+7	14	+7	9	+3	9	+3
6	8	+3	14	+9	11		11	+3	6	+2	10	+7
7	5	-1	7		7	+4	10	+3	7		9	+4
8	11	+8	a		7	+3	a		2	0	2	-3
9	10	+7	11	+4	13	+11	9		21	+10	10	+1
10	11	+7	8	+3	14	+7	17	+10	7	+5	10	+2
11	4	+2	10	+3	8	+7	8	+1	3	+3	12	+3
12	1	0	14	+7	10				5	+1		
13	a		10	+8	9							
14	8	+4	4	+1	15	+9						
15	7	+4	4	0	7	+2						
16	a		9	+7	7	0						
17	7		10	+3								
18	4	+3	11	+6								
19	10	+4										
20	7	+4										
Total	133	+59	150	+79	159	+63	85	+66	93	+54	97	+25

Table 29 above illustrates the raw scores of the second Spelling Test given at the end of the semester and shows the raw scores (RS) and differences, or not, in the column labelled D.

As was illustrated with the word attack and word identification tests the figures below further illustrate the rate the students improved, remained the same or dropped as is shown on the table above. The figures look at the three spelling tests the students did in their respective groups.
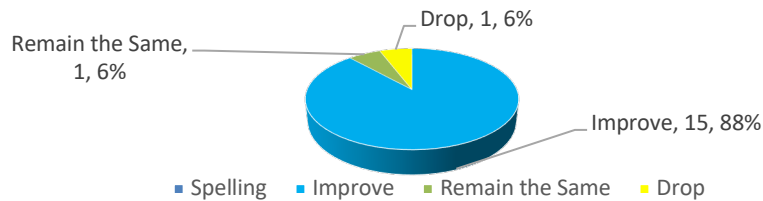
Figure 25 – Spelling Results Treatment Group 1
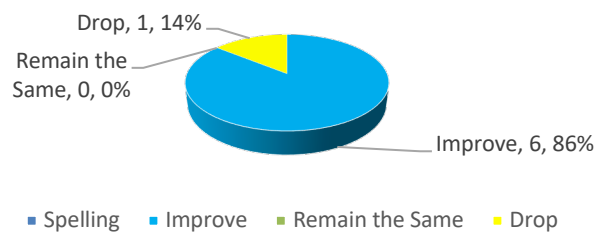
Figure 26 – Spelling Results Comparison Group 1

Figures 25 and 26 show the rates of improvement in the Spelling Tests in Treatment Group 1 and Comparison Group 1 being similar as well as the rate of scores dropping.

Figures 27 and 28 illustrate the rate of improvement in Treatment Group 2 and Comparison Group 2 in the Spelling Tests.
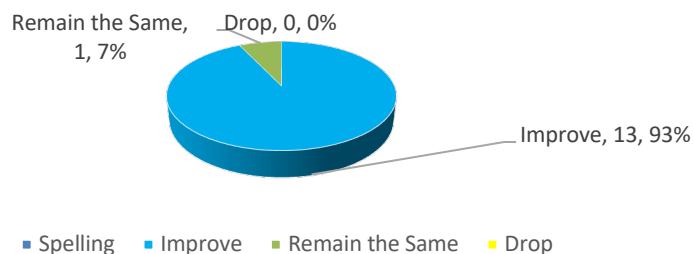
Figure 27 – Spelling Results Treatment Group 2

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Spelling • Improve • Remain the Same • Drop
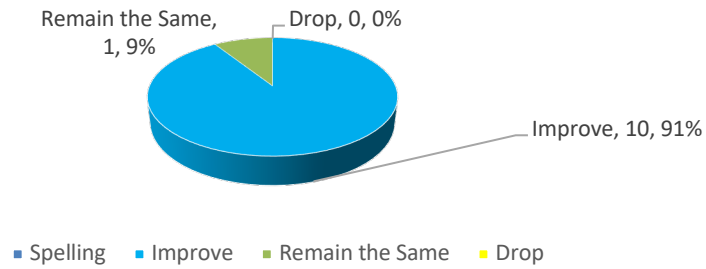
Figure 28 – Spelling Results Comparison Group 2

Figures 27 and 28 above show that although the rate of improvement is slightly lower in Comparison Group 2 compared to Treatment Group 2 the rates are almost the same at 91% and 93% respectively.

Figures 29 and 30 illustrate the Spelling Test results for Treatment Group 3 and Comparison Group 3.

Spelling • Improve • Remain the Same • Drop
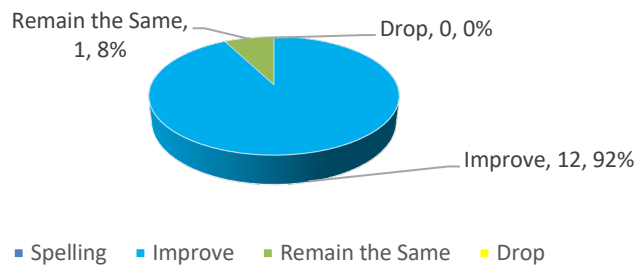
Figure 29 – Spelling Results Treatment Group 3

Spelling • Improve • Remain the Same • Drop
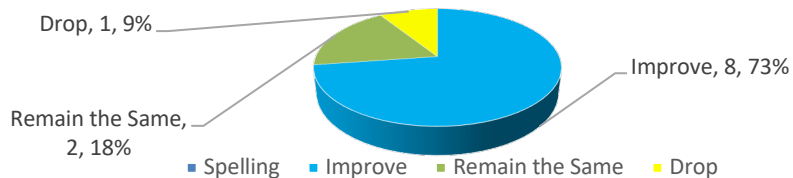
Figure 30 – Spelling Results Comparison Group 3

The above illustrations highlight the higher percentage rate of improvement in Treatment Group 3 in comparison to Comparison Group 3 with 92% and 73% rate of improvement respectively. Treatment Group 3 showed a no drop rate.

4.11.7 Figures illustrating the collective results of the tests

The figures below illustrate initially collective results of the tests to highlight the results discussed in the sections above. Each illustration is clearly marked as to the

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percentage the students improved, dropped or remained the same. For ease of comparison the Treatment Group is the first figure in each case and the Comparison Group thereafter.

The first test results are the collective results of the Word Attack Tests.
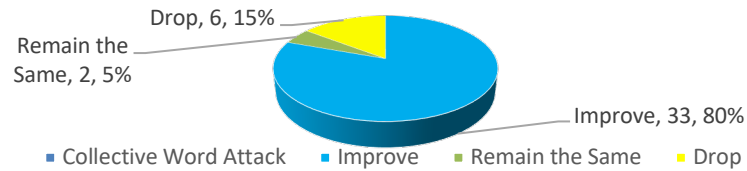
Figure 31 – Collective Treatment Group Word Attack Test Results
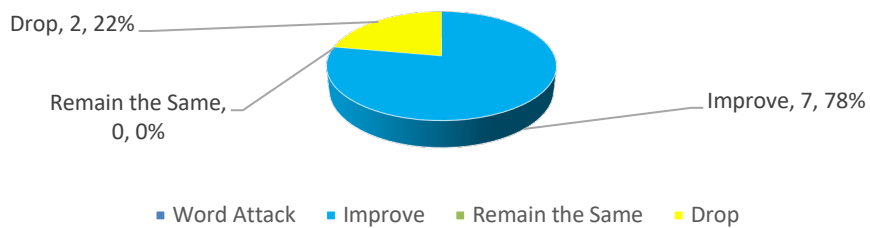
Figure 32– Collective Comparison Group Word Attack Test Results

Figures 31 and 32 illustrate that collectively the Treatment Group had a slightly higher percentage of improvement and a slightly lower drop rate of scores than the Comparison Group.

Figures 33 and 34 illustrate the collective results of the Word Identification Test Results.
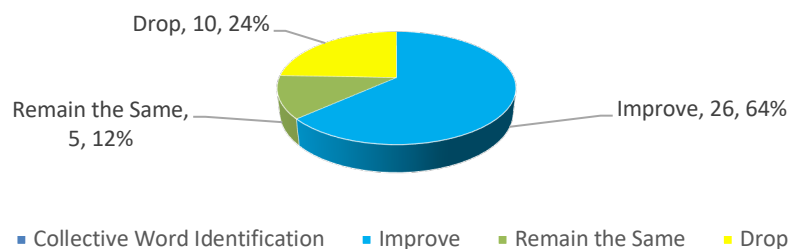
Figure 33 – Collective Treatment Group Word Identification Test Results

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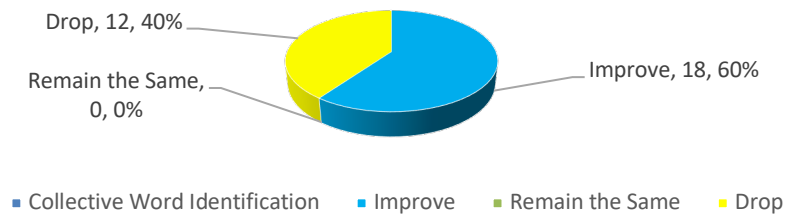
Figure 34 – Collective Comparison Group Word Identification Test Results

It can be seen in the above illustrations that collectively the Treatment Group, in the Word Identification tests, has a slightly higher rate of improvement at 64% compared to 60%. However, the Comparison Group shows almost double the rate of scores dropping at 40%. The Comparison Group had no students remaining the same whereas the Treatment Group shows 12% of students remaining the same.

Figure 35 and 36 illustrate the collective rates of the Spelling Test results.
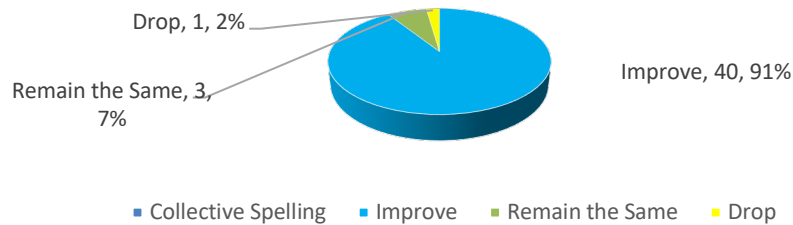
Figure 35 – Collective Treatment Group Spelling Test Results
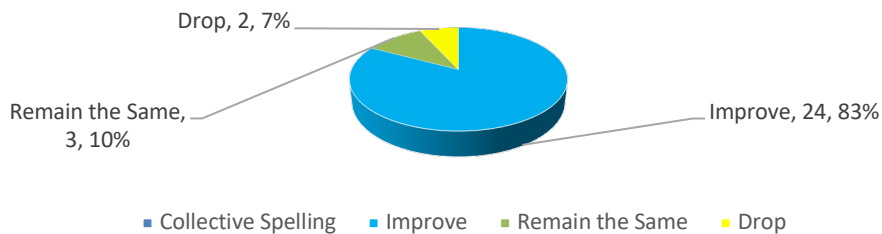
Figure 36 – Collective Comparison Group Spelling Test Results

Figures 35 and 36 above illustrate that the Treatment Group's rate of improvement in the Spelling Tests is higher at 91%, a difference of just over 10%. The percentage of students remaining the same is 3% higher in the Comparison Group at 10% and the drop rate is 5% higher at 7% - the Treatment Group had a percentage of 2.

In each of the figures above it can be seen that the percentage of improvement of the Treatment Group is higher than that of the Comparison Group. The figures below further illustrate the percentage of the treatment group's improvement being 79% and the percentage of the comparison group being 67%.

Figures 37 and 38 illustrate the percentages when all three tests' results, Word Attack Tests, Word Identification Tests and Spelling Tests, are combined.
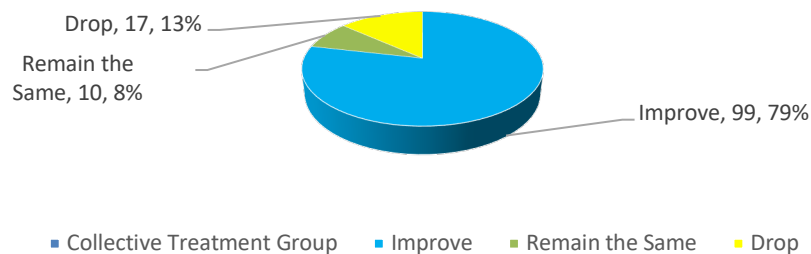
Figure 37 – Collective Treatment Group
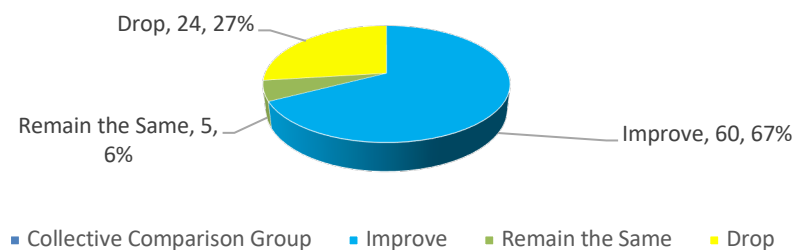
Figure 38 – Collective Comparison Group

The above figures show that when all the results are combined the Treatment Group shows a percentage rate of improvement of 79% and the Comparison Group 67%. The percentages of the students remaining the same are similar in both groups with the Treatment Group being 8% and the Comparison Group 2% less. The rate of the students dropping in score is just above double in the Comparison Group at 27%.

4.12 Statistical Analysis of Data

The tests were done in Microsoft Excel. The tests used were paired samples t-test to ascertain if there is a significant statistical difference between the Treatment Group and the Comparison Groups' results. The data detailed below show the mean, median, mode and standard deviation of the first and second tests of both groups and highlights the differences and similarities therein. The median, which removes

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outliers or extreme scores or values, was scrutinised further and the formula to ascertain the difference between the data, detailed in *Exploring Psychological Research Methods,* a course book for the Open University, was carried out. To understand how the test groups' mean reflect the population mean, by using 95% confidence intervals it would mean that if I were to repeat the study and collect more samples I am 95% confident that the population mean would lie in the generated confidence level.

The result of the formula for statistic *d* shows "the difference between the two sample means, expressed in standard deviation points" (2007, p. 172). The statistic *d* is therefore a measure of effect size. Cohen (1988) is cited in this course book as suggesting that "… a difference of 0.2 standard deviation points can be considered a small effect, a difference of 0.5 standard deviation points can be considered a medium effect and a difference of 0.8 standard deviation points can be considered a large effect". Both the minimum and maximum range are detailed below.

The initial description of data in the tables below is followed by a discussion.

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4.12.1 Word Attack Test Results Data

Table 30 Word Attack Statistics Comparison Table

	TG	CG
Mean 1st Test	8.55	10.18
Mean 2nd Test	12.54	12.00

	TG	CG
Median 1st Test	8	10
Median 2nd Test	11	10

	TG	CG
Mode 1st Test	8	7
Mode 2nd Test	11	8

	TG	CG
Standard Deviation 1st Test	4.54	6.30
Standard Deviation 2nd Test	5.65	6.29

	TG	CG
Minimum Range 1st Test	0	0
Minimum Range 2nd Test	3	3

	TG	CG
Maximum Range 1st Test	19	26
Maximum Range 2nd Test	25	29

$P = 0.05$

The mean of the treatment group and comparison group at the beginning of the semester, show that the comparison group's mean score is slightly higher than with the treatment group (10.18 versus 8.55). The median did not change in the comparison group; however, there is a slight increase from 8 to 11 in the treatment group. The mode increases from 8 to 11 in the treatment group and 7 to 8 in the comparison group. Although the minimum range in both tests remained the same in both groups, the maximum range shows that the treatment group increase from 19 to 25 and the comparison group increase from 26 to 29.

The paired sample t-tests show that there is no significant statistical difference between the treatment groups' first and second test p=5.25 and the comparison groups' tests p=0.13. Neither was there a statistical difference between the

treatment group and comparison group in the first test p=0.50 or the second test p=0.41.

4.12.2 Word Identification Test Results Data

Table 31 Word Identification Statistics Comparison Table

	TG	CG
Mean 1st Test	36.34	38.42
Mean 2nd Test	39.86	39.48
Median 1st Test	37	41
Median 2nd Test	41	41
Mode 1st Test	37	43
Mode 2nd Test	44	44
Standard Deviation 1st Test	9.69	12.21
Standard Deviation 2nd Test	7.41	12.21
Minimum Range 1st Test	5	5
Minimum Range 2nd Test	18	6
Maximum Range 1st Test	54	54
Maximum Range 2nd test	57	68

p = 0.05

The mean of the treatment group and the comparison group in the first test is higher for the comparison group. In the second test the mean is slightly higher in the treatment group. The median in the first test is 37 in the treatment group and 41 in the comparison group and in the second test the median is 41 for both groups. The mode is slightly lower in the first test for the treatment group and in the second test both groups are identical at 44. The standard deviation indicates the treatment group shows less dispersion in the second test whilst the comparison group remained the same in the first and second test. The minimum range for the first test was the same for both groups at 5 and in the second test the treatment group increased to 18 and the comparison group to 6. The maximum range was also the same for both groups

in the first test at 54 and the treatment group increased to 57 and the comparison group to 68.

The paired sample t-tests show a significant difference in the treatment groups' tests at p=0.01. There is no significant difference shown between the comparison groups' first and second test at p=0.25 nor between the treatment group and comparison groups' first tests at p=0.55 nor the second tests at p=0.68.

4.12.3 Spelling Test Results Data

Table 32 Spelling Statistics Comparison Table

	TG	CG
Mean 1st Test	4.20	5.77
Mean 2nd Test	8.86	8.87

	TG	CG
Median 1st Test	4	6
Median 2nd Test	9	9

	TG	CG
Mode 1st Test	3	7
Mode 2nd Test	7	10

	TG	CG
Standard Deviation 1st Test	2.12	3.11
Standard Deviation 2nd Test	3.12	4.45

	TG	CG
Minimum Range 1st Test	0	0
Minimum Range 2nd Test	1	2

	TG	CG
Maximum Range 1st Test	9	11
Maximum Range 2nd Test	16	21

p = 0.05

The mean in the first test shows the comparison group slightly higher in average than the treatment group with 4.20 for the treatment group and 5.77 for the comparison group. In the second test, however, the mean shows only 0.01 difference between the groups. The median shows a slight increase in the comparison group in the first test and identical in the second test with a median of 9. The mode indicates an increase in both groups with the treatment group increasing from the first to the

second test from 3 to 7 and the comparison group from 7 to 10. The minimum range is identical in the first test for both groups and only shows a slight difference in the second test with the comparison group having a minimum range of 1 and the comparison group 2. The maximum range shows the comparison group slightly higher in the first test, 9 being the treatment group and 11 the comparison group, and in the second test the treatment group's maximum range is 16 and the comparison group's is 21.

The paired sample t-tests show no significant difference between the treatment groups' first and second tests at p=8.59 and no significant difference between the comparison groups' first and second tests at p=2.11. The results between the treatment group and comparison group's first tests show no significant difference at p=0.06 and also in the second tests at p=0.81.

4.13 Discussion of statistical data

4.13.1 Discussion on statistical data from word attack tests
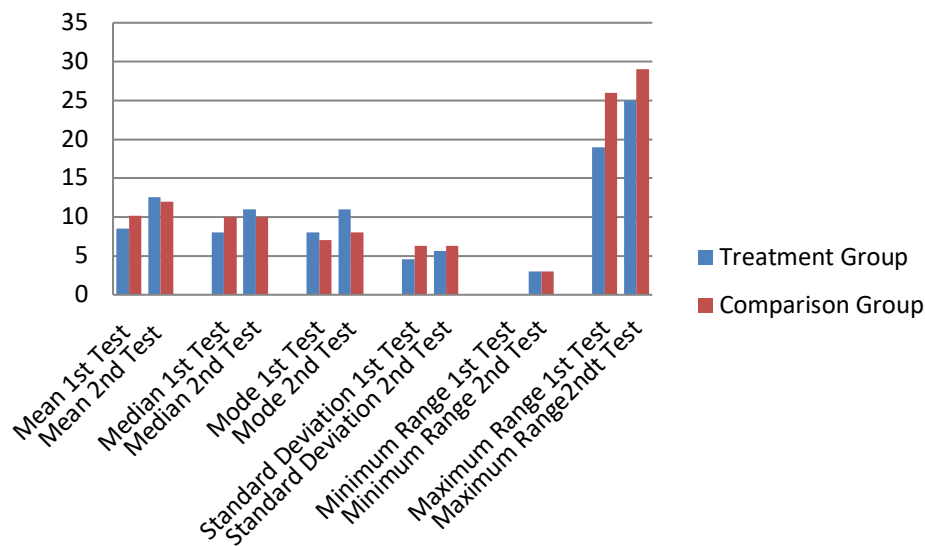
Figure 39 Word Attack First and Second Test Results

The paired sample t-tests on the Word Attack Tests showed there was no statistical difference between the treatment groups' first (the test before phonics instruction) and second test (test after phonics instruction) (p=5.25); they also showed there was no statistical difference between the comparison groups' first and second test (p=0.13) as indicated on Table 30.

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The mean in the first tests showed the comparison group to be the stronger group with a mean of 10.18 compared to the treatment group's mean of 8.55 at the beginning of the semester. In the second tests the mean of the treatment group showed a higher growth rate from 8.55 to 12.54, which indicates a substantial statistical difference in growth which could mean an improvement in applying phonic and structural analysis skills than the comparison group that showed a lesser growth from a mean of 10.18 to 12.00.

The median, which is a more accurate measure as it removes the outliers, supports this analysis with no growth in the comparison group's median (10 in both tests), and the treatment's group median showed an increase from 8 to 11. The treatment group shows a growth of 39.5% between the first and second tests and a difference in standard deviation of 1.11 which according to Cohen's suggestion discussed above, shows a statistical significant difference in growth, in comparison to zero in the comparison group.

The mode follows the same pattern indicating that the value that occurred most often for the treatment group increased in the second test to 11 from 8 in the first test, whereas the comparison group showed a smaller increase from 7 in the first test to 8 in the second. The mode shows the value that occurred most often increased more in the treatment group than it did in the comparison group indicating improved growth. The standard deviation in the comparison group decreased marginally from 6.30 in the first test to 6.29 in the second test showing little change in the dispersion, whereas the treatment group showed a higher variation of dispersion from 4.54 in the first test to 5.65. The minimum range was the same for both groups on both the first and second test (0 – 3 respectively), but the maximum range showed more growth by the treatment group between the first and second test from 19 to 25, whereas the comparison group, being the stronger group with the first test maximum being 26 showed less improvement with a maximum of 29 in the second test. This data could indicate that although there is no statistical difference the treatment group shows more growth in the test that measures the ability to apply phonic and structural analysis skills to unfamiliar words (the test is described in depth in Chapter 2.

4.13.2 Discussion of statistical data from word identification tests
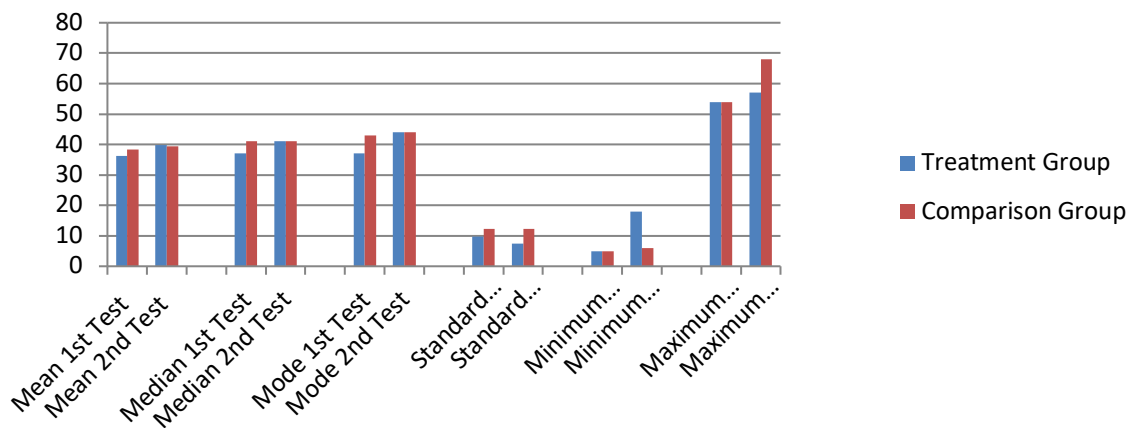
Figure 40 Word Identification First and Second Test Results

The paired sample t-tests show no significant difference between the comparison groups first and second test at p = 0.25. There is also no significant difference between the treatment group and comparison groups' first tests at p=0.55 nor the second tests at p=0.68. However the t-tests show a significant difference between the treatment group's first and second test at p=0.01. The word identification test (described in depth in Chapter 2) required the student to read the word within five seconds, not necessarily knowing the meaning. As the treatment group's results show a statistical significant difference one could conclude that the phonics instruction has contributed to the students' improved ability to read the words naturally when compared to the comparison's group's results. Similar to the mean results in the first word attack tests, the mean in the first word identification tests indicate that the comparison group is stronger, but in the second tests the treatment group is slightly higher in mean with a result of 39.86 compared to 39.48 being the comparison group's result. These results illustrate more improvement by the treatment group.

The median follows a similar pattern in the Word Identification test as in the Word Attack test with zero difference in the comparison group. The Treatment Group, however, shows an improvement of 47%, with a standard deviation difference of 7.78, which according to Cohen (1988), can be considered a large effect.

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The mode reveals a similar trend; the comparison group with a slightly higher result of 43 (treatment group 37) for the first test then both the treatment group and the comparison groups' mode being 44 at the end of the semester, again indicating more growth by the treatment group bring the treatment group to the identical level of the comparison group. The standard deviation shows the dispersion of values decreased in the treatment group (9.69 to 7.41), but remained the same for the comparison group (12.21), again reflecting an improvement in the treatment group. The minimum range test revealed a significant improvement in the treatment group from 5 to 18, whereas the comparison group showed a minimal improvement from 5 to 6, however in the maximum range the comparison group showed more growth from 54 to 68 than the treatment group that increased from 54 to 57.

The data indicate a significant statistical difference in the treatment group's progress in some areas and although the data do not show a significant difference between the treatment group and the comparison group, the treatment group's results could indicate the phonics instruction was responsible for the improvement in reading words that are not seen frequently in English.

4.13.3 Discussion of statistical data from spelling tests
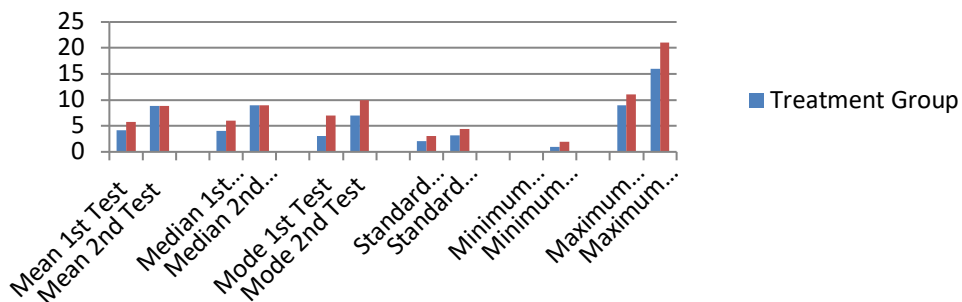
Figure 41 Spelling First and Second Test Results

The paired sample t-tests show no significant statistical difference between the treatment group's first and second tests, the comparison group's first and second tests nor the treatment groups and comparison groups on both the first and second tests. The mean indicates, similar to the above results from the data from the word attack and word identification tests, that the comparison group is stronger in the first tests. Again, similar to the above results, the treatment group shows more growth

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from the first test improving from a mean of 4.20 to 8.86 compared to 5.77 to 8.87 in the comparison group.

The median shows an improvement in both groups in this test. The Treatment Group improved 190%, whereas the Comparison Group improved 79%. The standard deviation differences are statistically significant for both groups, being 1 and 1.34 respectively.

Although, lower than the comparison group in the second test, the mode illustrates slightly more improvement in the treatment group than the comparison group increasing from 3 to 7 compared to 7 to 10 respectively. The standard deviation test results show an increase in dispersion in both groups with less of an increase in the treatment group between the tests from 2.12 to 3.12 compared to 3.11 to 4.45 in the comparison group. The minimum range was similar in both groups with minimal growth indicated between the first and second tests in the lower range, however, the maximum range showed an increase in both groups with the comparison group showing more growth from 11 to 21 compared to the treatment group from 9 to 11.

The paired t-tests showed no significant statistical difference between the tests the Treatment Group and the Comparison Group, however, there is a significant statistical difference in the improvement rate of the Treatment Group in all three tests, Word Attack, Word Identification and Spelling.

5 Chapter 5 Discussion

This chapter initially highlights some of the results indicated in the collective analyses shown in Figures 13 to 38 in Chapter 4. These figures look at the improvement rate, drop rate and rate of scores remaining the same. The research questions are looked at individually focussing on how the findings of this research highlighted how phonics instruction improves phonics awareness, reading and spelling skills. The results of the treatment group and the comparison group will be discussed. The limitations and how they may or may not have affected the outcome of the research are presented. Furthermore, I include some comments from a lecturer at the institution where I did the research, as she is now using the teaching and testing material I used, with some necessary adaptations due to the lower level of English of her students. I conclude with a reflection on my experience as a teacher/researcher and present a new toolkit that has been recently been introduced into the area of teaching phonics to adults and sent to me by Professor Brooks B.A., M.A., PGCE, PhD.

5.1 Discussions of the collective results in the word attack, word identification and spelling tests

5.1.1 Discussion of the word attack test results

The Word Attack tests require the student to read either nonsense words or words with a low frequency of occurrence in English. Nonsense words are used in these tests to identify the students' ability in using phonic analysis skills to pronounce words with which he would be unfamiliar. This test simulates what a reader would do if he/she encountered an unknown word whilst reading. Figures 13 to 18 in Chapter 4 show the results of the improvement rate, drop score rate and rate of scores staying the same for Treatment Group 1 and Comparison Group 1 and then Treatment Group 2 and Comparison Group 2 and finally Treatment Group 3 and Comparison Group 3 on the word attack tests on the respective groups. Figures 31 and 32 in Chapter 4 illustrate the same components with the tests of the treatment groups combined in Figure 31 and the tests of the comparison groups combined in Figure 32 and the percentages show that the treatment group has a slightly higher rate of improvement at 80%, this is taking into account that in comparison group 2 there was a 100% improvement in scores as shown in Figure 16. More students' scores dropped in the comparison group than the treatment group at 22% and 15%

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respectively. 5% of the students in the treatment group had the same score and none in the comparison group had the same score. These results show that the treatment group had a higher rate of improvement in the word attack tests and fewer students' scores dropped.

5.1.2 Discussion of the word identification test results

The word identification tests require the student to identify words and as the student proceeds through the test, the words that appear are used less and less frequently in written English. The student has a limited time to read the word naturally. Figures 19 to 24 in Chapter 4 show the results of the improvement rate, drop score rate and staying the same rate in Treatment Group 1 and Comparison Group 1, then Treatment Group 2 and Comparison Group 2 and Treatment Group 3 and Comparison Group 3 in the word identification tests on the respective groups. Figures 33 and 34 in Chapter 4 show the same components with the combined treatment groups in Figure 33 and the combined comparison groups in Figure 34. These figures highlight a similar pattern as in the word attack tests with the treatment group showing a slightly higher improvement rate at 64%, and a small rate of students' scores dropping at 24% in the treatment group and 40 % in the comparison group. 12% of the students in the treatment group had the same score whereas no students in the comparison group kept the same score.

5.1.3 Discussion of the spelling test results

The students were tested on twenty words at the beginning and end of semesters. Figures 25 to 30 in Chapter 4 show the results of the improvement rate, drop score rate and rate remaining the same in Treatment Group 1 and Comparison Group 1, Treatment Group 2 and Comparison Group 2 and Treatment Group 3 and Comparison Group 3. Figures 35 and 36 show the same components for the treatment group and comparison group combined. The treatment group has a higher rate of improvement compared to the comparison group at 91% and 83% respectively. Similar to both tests mentioned above there are more students that dropped their scores in the comparison group at 7%. In the treatment group 2% of the students dropped in score. Students that had the same score are 7% in the treatment group and 10% in the comparison group.

5.1.4 Discussion of the combination of all the above tests.

A combined average was taken of all the results in the above tests as illustrated in Figures 37 (Treatment group) and 38 (Comparison group) in Chapter 4. The combined results show that the treatment group had an overall improvement rate of 79% and the comparison group 67%. The students that dropped their scores in the treatment group amounted to 13% which was lower than the comparison group at 27%. The rates of the students with the same score are similar at 8% and 6% for the treatment group and comparison group respectively.

Apart from the phonics instruction all groups followed the same programme during the time period I carried out the research for this thesis.

5.2 Research questions

5.2.1 Does phonics instruction improve phoneme awareness?

Taking into account that the word attack tests require the student to apply phonic analysis skills in order to pronounce the words I believe that the above test results show that with phonics instruction students' ability to use these skills improve. Apart from the test results discussed above, when observing the students during the tests note was taken as to whether the students seemed to be applying the phonic skills they had learned. It was obvious to me that some of the students in the treatment group attempted to use these skills whereas the comparison group did not have this advantage. In the tests given at the beginning of the semester the students in both the treatment group and the comparison group would give up and even laugh at some of the nonsense words whereas at the end of the semesters this reaction was only obvious in the comparison group. The treatment group tried to use their phonic skills to decipher the nonsense words. I would therefore claim that according to the data collected and analysed on this research it appears that the phonics instruction has increased these students' phoneme awareness and ability to apply their knowledge in an attempt to decode unknown words.

Taking into the account the responses from the questionnaires of the treatment group at the end of the semester the majority of the students responded that they could now match the grapheme and phoneme correspondences that we had covered.

5.2.2   Does phonics instruction improve reading?

Taking the above into account and looking at the reading age equivalence results discussed in Chapter 4 with regard to the treatment groups and the comparison groups it can be seen that both the treatment groups' and the comparison groups' word attack and word identification scores indicate an improvement in scores which in turn indicate an improvement in reading age equivalence. When looking at the reading age equivalence in the comparison group at the beginning of the research five out of the six tests given show the students in the comparison group had a slightly higher rate of reading age equivalence than the treatment group. At the end of the research the results show that in three of the tests the comparison group had slightly lower reading age equivalence than the treatment group and in three the comparison group is slightly higher in the reading age equivalence. Figure 31 in Chapter 4 shows the improvement percentage of the treatment group at 80% in the word attack test and Figure 32 shows the improvement rate of the comparison group at 78%. Figures 33 and 34, also in Chapter 4, show the results of the improvement rate in the treatment group and comparison group being 64% and 60% respectively. These results imply that the treatment group's rate of improvement is higher than the comparison group and could indicate that the phonics instruction was instrumental in this improvement in reading. Previous research has shown that phonemic awareness instruction may lead to increased achievement in reading (Kruidenier, 2002). Furthermore, Kruidenier (ibid, p.52) posits that phonics instruction allows readers to learn the skill to decode and therefore become more independent and accurate in reading.

5.2.3   Does phonics instruction improve spelling?

The spelling tests results at the beginning of the semester show that in all three tests given to both the treatment groups and the comparison groups the comparison group students are higher in spelling equivalence age than the treatment group students. In comparison group one and two the tests show the age difference is approximately a year higher and in the comparison group three two years higher. However, in the tests given at the end of the semester the minimum spelling age equivalent is around six years of age in both the treatment group and the comparison group. The higher reading age is higher in one of the comparison group classes, the same in one and lower in one. Looking at the collective percentages shown in Figures 35 and 36 in

Chapter 4, the improvement rate of the treatment group is 91% and the improvement rate of the comparison group is 83%.

The teachers that lectured the participants in this research did not teach the students in phonics instruction at all, although part of their programme is spelling improvement so all the participants had spelling tests during the semesters. It is interesting to note that whilst the comparison group happened to be the stronger group in spelling at the beginning of the semester the improvement rate is higher in the treatment group. When speaking to the teachers at the end of the research it was their opinion that the phonics instruction had contributed to this improvement. I was not permitted to have any of the students' institutional exam results; however, the teachers assured me that the treatment group classes had higher grades in their spelling tests. Unfortunately, this was all the information I was given access to.

5.2.4 Statistical Analysis

Taking all the above into consideration the conclusion of the statistical analysis gives basis to the data. The statistical analysis shows there is no significant difference between the results of the tests of the treatment group and comparison group, however, there is a significant statistical difference in the improvement rate of the treatment group compared to that of the comparison group. The only difference in the tuition these groups received was that the treatment group received phonics instruction. The statistical analysis corroborates the improvement rate is higher in the treatment group and as the only difference in tuition is the phonics instruction it is possible to conclude that this tuition was responsible for the improvement.

5.2.5 Discussing the students' responses in their questionnaires.

The questionnaires were helpful in ascertaining that the majority of the students had had no previous phonics instruction as well as a myriad of background information at the beginning of the research carried out for this thesis. They also gave the opportunity to gain the participants' perspectives from the treatment group students at the end of the semester as to how they felt about the phonics instruction. The open-ended question responses indicated that the students would like to be given more time to learn the phonics as well as more classes of phonics instruction. Fortunately, this has materialised and one of the teachers has sent a detailed report

on how she adapted the materials I used and I include her comments later in this chapter.

I queried some of the responses in an informal interview with some of the students because I thought it interesting that the majority had responded that they found the phonics helpful, but had not made the effort to study the grapheme/phoneme correspondences we had covered. The communal response was that the tests given with regard to the phonics instruction were not graded so they did not take the time to learn the material. I discussed this with the class teachers and they confirmed that the majority of the students are extremely grade motivated. The teachers did not feel that the students were overwhelmed with work, rather that they were only concerned about getting grades. There was another response that piqued my curiosity and I mentioned it during the same informal interview. The response was:

"I am angry in this class"

I told the students that if the student that wrote this wished to discuss it with me, I was interested to find out why he was angry. This student approached me after the class in private and I ascertained that he meant nervous not angry; this is a common word choice mistake amongst Emiratis. He explained that he wanted to have the time to get his answers right, but that there was not enough class time and that made him nervous.

5.3   The limitations

5.3.1   The limitation in time frame for the data collection

The variable I feel was most important as well as devastating to me was that the research was brought to an abrupt halt because of a rule that was introduced to the institution and there could be no exceptions. The rule was that there was no paper allowed to be used on campus from the following semester. All instruction was to be given via iPad and as this would have affected the credibility of the results on the tests I was conducting, I had to conclude my research. In my calculations I still needed at least one more year of two semesters to collect what I considered enough data. This is why I was advised to bring the pilot group's data into this thesis as it was a contributory factor into how I amended the material. The tests I used for the pilot group were not standardised tests so therefore I did not include them in the

analyses. The idea of the pilot group originally was to see how students reacted to the phonics instruction and I was still investigating the possibility of using standardised tests and where I would get them.

Another limitation related to time spent with the participants was that I only had about twelve lessons with the students during the semester. In that time, I had to carry out the teaching, the testing for data collection and the completion of questionnaires. This in turn meant that I could only cover a minimal number of grapheme/phoneme correspondences. The tests at the beginning and end of semesters were necessary for the validity and reliability of the data as were the questionnaires. The grapheme/phoneme tests that were given were an attempt at motivating the participants to learn the grapheme/phoneme correspondences. These tests were more of a class activity to encourage learning.

5.3.2 Attendance of students

The attendance of the students was low in some of the classes and very often the institution neglected to advise me that students had other activities they had to attend and would not have a class on the day allotted to me. This meant that some of the tests were not done by all the students. I was not advised that classes were not compulsory for the week I had allocated for the final questionnaire in a few classes and therefore some of the students did not attend. Fortunately, in one of these classes the teacher gave me some of her class time to complete the final questionnaire or it would not have been done and possibly skewed the data.

5.3.3 Students' motivation

As mentioned above the students did not study the material even though in their perspectives, according to their responses on the questionnaires, the phonics instruction would be helpful in many areas in the English language. The students, as confirmed by their teachers, were motivated by grades. This was not something I would have anticipated. I would have thought that if students realise something is helpful, they would take the time to study. This was the advantage of combining qualitative with quantitative research. The responses in the questionnaires and informal interviews in class gave me the opportunity to gather qualitative data and receive data I would not have anticipated, an advantage that Bryman, (2006, p.110) discusses being relevant when you combine qualitative and quantitative research.

The qualitative data helped explain some of the quantitative data findings (Greene et al. 1989, p.271). The grapheme phoneme tests I carried out during the semester, when time allowed for it, were a way I thought would encourage learning. These were not standardised tests and although they were discussed in the analyses, they were not used in the final analyses or the statistical analysis. If the students had been motivated to learn the phonics, the question is, would this have affected the outcome? McShane (2005, p.30), comments that learners might not achieve their learning goals unless they are committed and actively participate.

5.3.4 Lack of access to institutional grades

The fact that I was not permitted access to the institutional grades with regard to reading and spelling was unfortunate as it could have fortified the data that I collected during the semesters.

5.4 Report and comments from teacher using materials used in research

A teacher from the institution where I did my research, who was a class teacher for some of the classes that participated in the research, contacted me and requested to use the worksheets and other material I had used whilst teaching the class (See Appendices 7 – 19 for the worksheets). I also sent her the consonant chart (See Appendix 5) and Vowel Chart (See Appendix 6). The tests she used were the grapheme/phoneme tests I used for the pilot group and with the treatment group and comparison group for tests during the semester for motivation (See Appendices 21 and 22). These were not the standardised tests. She used this material with three of her classes that were level 1 and the students used the material once or twice a week. The materials had to be adapted to accommodate a lower level of student as the students were now admitted with a CEPA level of 90 not 150 like the participants in my research. She sent me a report on how she adapted the worksheets and gave feedback on the students as well as her perspective on the phonics instruction (See Appendix 50 for her complete report). She stated that in week 5 or 6 she could see the students understanding more of the sounds of English and looking for patterns. She had the time to follow up on the worksheets with related short stories and vocabulary games which she feels benefited the students, but acknowledges I did not have time to do that. She felt that as they encountered the patterns more it helped

them recognise and learn the patterns. She pointed out that she could see the students using the patterns available to them and that the worksheets helped them notice these patterns when they were using their graded readers. She did comment that working with Study ladder reading slots that focussed more on patterns and my worksheets that had controlled form-focused exercises enabled the students to notice and identify the patterns when reading.

She concludes that the students became more phonologically aware recognising the irregularities in the phonics of English. She confirms there is evidence that they use these skills when reading and writing.

5.5 Final comments

Taking the above into consideration it appears that the phonics instruction given to the treatment group increased the participants' improvement rate in phonological awareness, reading and spelling. There seems to be agreement amongst many researchers and commentators that systematic phonics instruction is related to an improvement in phonological awareness, however, there is still no justified proof as to which approach is superior (Bielby, 1998; Ehri et al. 2001; Perfetti et al. 2001; Brooks, 2002; Brooks, 2003; Johnstone & Watson 2004; Brooks, 2006; Rose, 2006; Torgerson et al. 2006; Brooks, 2007; Brooks et al. 2007; Burton et al. 2008; Graff et al. 2009; Brooks & Burton, 2010; Burton et al. 2010; Brooks, 2011; Burton, 2011; Brooks, 2017; Clark, 2017; Beard et al. 2018; Castles et al. 2018; Moss et al. 2018; Torgerson et al. 2019, Moss et al. 2019). The statistical analysis corroborated this result showing that whilst there was no significant statistical difference in the scores between the treatment group and the comparison group there was a significant statistical difference in the improvement rate of the treatment group. Whilst I acknowledge that it would have been beneficial to have been able to collect more data, I was fortunate that there was sufficient data to reach a result statistically.

The students in this research were enrolled in a foundation programme to which the phonics instruction has now been added by some teachers. At this stage it is not part of the curriculum, however, some of the teachers that observed the research carried out for this thesis have included phonics instruction in their lessons.

The data collected in this research indicates that it is advantageous to include phonics instruction within a programme. At the time of carrying out this research there was not much research in phonics instruction with adults that I was aware of. However, Kruidenier (2002, p.143), who had done research in this field with adults, comments that phonics awareness has to be developed to enable decoding skills and that reading skills, as they improve, will increase phonics awareness. One example that stands out for me that the students were using decoding skills after phonics instruction was in the Word Attack test where the word *house* was often initially said as *home*, but several of the participants in the treatment group would very quickly change it after noticing the letter s. Whether they were using decoding skills rather than whole word recognition was difficult to determine, but it definitely appeared to be the case as after a few participants followed the pattern of saying *home* rather than *house*, I made a point of recording whether the students were in the comparison group or the treatment group. I observed that many in the comparison group did not correct themselves, whereas in the treatment group the participants did.

Taking this research into consideration, phonics instruction should be a component of a learning programme which is what is being implemented by some of the teachers in the institute where I did this research as discussed above. Brooks et al. (2007, p.69), confirm that accurate phonics teaching has been effective and suggest that teachers should be trained in phonics instruction and further research should be carried out bearing this in mind with adults. Teacher training in phonics is beyond the scope of this research, however, Brooks et al. (ibid., p. 70) suggest "[a] detailed development and research project should be carried out on teachers teaching phonics in adult literacy". Greater attention should now be given on how not to teach phonics to avoid common missteps (Duke & Mesmer, 2018-2019). Another area that is beyond the scope of this research is the matter of having a competent speller who has not had phonics instruction. Dixon 2017, claims that students should be taught spelling patterns to prevent students presenting incorrect spelling and that students who had received phonics instruction often spelt words incorrectly by spelling them exactly as they sounded. This is an area that requires further research.

As I reflect on the research that I conducted for this thesis I remember reading that when practising AR it would be difficult balancing the theoretical and practical

aspects of the profession (Nunan, 1993). I think that one of the most difficult aspects I had to contend with was knowing that I would rather have used the time teaching that I had to dedicate to carrying out tests to collect data. However, at the same time, I was eager to analyse the data so that the findings would contribute to improved teaching practice which would benefit the students. I developed a concern early in my teaching in the UAE about the level of the reading skills, which led to my discussion with my colleague and his suggestion about teaching phonics. It was rewarding being actively involved in the research and able to reflect on the methods of teaching and collecting data then change the material to be more effective and add reliability and validity to the findings. Having the opportunity to carry out this research in an educational institution has been most rewarding. The results of the data collected have given me the opportunity to collaborate with educational leaders in the hope of strengthening understanding on how phonics instruction can help Arabic learners of English.

As I mentioned earlier in this thesis, at the time of doing this research there was very little phonics instruction material for adults. Recently, Professor Greg Brooks B.A., M.A., PGCE, PhD., advised me of material specifically designed for the adult sector that explores approaches to phonics teaching, the essential concepts, how to assess learners' needs and gives resources designed for post-16 learners. Professor Brooks is an Emeritus Professor of Education at the University of Sheffield. He is a past president and honorary life member of the UK Literacy Association, a member of the Reading Hall of Fame and immediate past Chairperson of the Federation of European Literacy Associations. In 2011-2012 he was one of the ten members of the European Union High Level Group of Experts on Literacy. Professor Brooks was both a member of the Rose committee in 2005-2006 and a member of the team with Torgerson & Hall (2006), to produce a systematic review of the research evidence on phonics. He claims that this experience gave him the opportunity to be "metaphorically on both sides of the desk" when it came to looking at phonics instruction (Moss et al. 2018, p.75). He is one of a group of experts that the Education and Training Foundation commissioned to investigate current teaching practice in using phonics in the Further Education and Training Sector. The group of experts developed a toolkit for phonics teaching in the post-16 sector – *Post-16 Phonics Approaches: A Toolkit*. The first chapter outlines some of the key

characteristics of the approach to using post-16. It details the "differences between using phonics approaches with children who are just beginning their literacy lives, and addressing the needs of adult or post-16 learners who bring much richer life experience to the task (Moss et al. 2019, p. 11). This tool kit opens up a new possible area of research into the teaching of phonics to adults using reputable material.

"As learners build up a repertoire of grapheme-phoneme correspondences they learn not to be daunted by the variations they encounter, but to take them in their stride" (Moss et al. 2019, p.16).

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7 Appendices

Appendix 1.

Dear student,

As you are trying to improve your English whilst you study, your class has been selected to participate in research into ways that teachers could help you achieve your goal. In order to do this I would like to know something about your previous experiences of learning English and therefore you will be asked to complete a questionnaire at the beginning of this research. You will then receive instruction in phonics with several tests to monitor your progress. At the end of the semester you will be asked to complete another questionnaire and participate in a voluntary interview if you wish. The interview will be recorded to enable easy data collection.

Thank you for your help.

Linda Graham.

Subject consent form

I have been given information on the research to be carried out by Linda Graham and have had the opportunity to ask her any questions.

I understand that I am required to participate in class and will be asked to complete a questionnaire at the beginning and end of the semester. Should I wish, I may participate in an interview which will be recorded and take place at the end of the semester.

I understand that my name will be kept in confidence and that my identity will not be revealed.

I agree to take part in the research.

……………………………….   Date: ………………………

Signature

…………………………………………………..

Name

Please note:

- Should you participate in the interview you will be free to withdraw at any time
- Although I cannot guarantee absolute anonymity, names will be changed, no damaging information will be released and the information given and data collected will be used for research purposes only

Appendix 2

Questionnaire

Please answer all the questions following instructions given.

1. Indicate what age category you are in by marking the box:

17 – 19   20 – 23   24 – 27   28 – 30   Older than 30

2. What part of the United Arab Emirates did you grow up in? If elsewhere, please write place on space provided. ………………………………………..

3. Did you have your primary school education in (Please put an x on line):

___ a public school   ___ a private school   ___ both

4. Did you have your secondary education in (Please put an x on line):

___ a public school   ___ a private school   ___ both

5. How old were you when you started to study English? ………..

6. What grade were you in at the time? …………..

7. Did you learn the sounds of the letters in English?

Yes □ No □   Cannot remember □

8. Did you learn the sounds the letters make when joined, for example, sh – the first sound in shake or ch – the first sound in chair?   Yes □ No □   Grade or age _____

9. Do you have any younger brothers or sisters or children of your own?

Yes □ No □

If your answer is 'no' please leave out questions 10 and 11, if your answer is yes please answer questions 10 and 11.

10. Do you notice any difference in the way they are learning English?   Yes □   No □

11. Are your younger brothers, sisters or children learning the sounds of the letters?

Yes □ No □   Do not know □

12. Do you know all the sounds of the letters?   Yes □   No □

13. If you received this kind of instruction, what areas of English do you think it will improve? Please indicate by marking the boxes:

Reading □   Spelling □   Vocabulary □   Writing □   Listening □   Speaking □

 Any other areas: ……………………………………………………………

Thank you for your time.

Appendix .3

Short vowel test – Pilot Class (Test 1)

Test 1 on short vowel sounds

Put in the letters that match the sounds you hear:

1. _ngry

2. _ffer

3. _ns_cts

4. _legant

5. j_nk mail

6. _dvertisement

7. d_mage

8. g_dget

9. fl_t

10. qual_ty

11. b_cteria

12. _ffice

13. dr_p

14. _ngredients

15. b_nging

16. c_ntrol

17. s_lary

18. st_ck

19. _pisode

20. c_t _p

Appendix 4.

Answer sheet

1. angry
2. offer
3. insects
4. elegant
5. junk mail
6. advertisement
7. damage
8. gadget
9. flat
10. quality

11. bacteria
12. office
13. drip
14. ingredients
15. banging
16. control
17. salary
18. stick
19. episode
20. cut up

Appendix 5

Consonant Chart

Consonants								
flock f cliff ff phone ph	like l still ll bottle le	mat m cramming mm numb mb	not n cunning nn knob kn gnome gn	rest r stirring rr write wr	sit s kiss ss sent se circus c cent ce	vet v brave ve	zoo z buzz zz rise se has s	discussion si station ti vicious ci shame sh
think th	bring ng	nk think	big b stabbing bb	come c kick k brick ck choir ch unique que	drink d puddle dd	got g bragging gg fatigue gue	h hat wh whole	jet j giraffe g stage ge bridge dge
pot p stopping pp	queen qu	top t kettle tt	wet w while wh	x oxen	y yellow	chain ch switch tch		

Adapted from the Spelling Chart in Read Write Inc. , a series developed by R. Miskin (2008)

Vowel Chart

apple a	red e bread ea	in i gym y	orange o	under u	pay ay plate a-e pain ai eight eigh table a	been ee beach ea be e baby y	high igh pie ie dry y alive i-e blind i	know ow smoke o-e boat oa go o

boot oo blue ue chew ew cute u-e shoe oe	look oo	far ar past a	corn or tore ore door oor law aw	fairy air dare are bear ear	third ir purse ur her er	out ou how ow	toy oy soil oi	fire ire	near ear seer eer	injure ure or mirror our colour

Adapted from the Spelling Chart in Read Write Inc. , a series developed by R. Miskin (2008)

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Appendix 7

Work sheet Number 1

Write the words I say using these letters 'ay' 'a-e' 'ai' 'eigh' 'a':

……… ……… ……….   ………..   ………..

ay		a-e		ai		eigh		a	
day		made		wait		eight		cable	
way		ate		paid		weight		table	
away		make		pain		weigh		able	
stray		take		train				apron	
delay		came		fail					
today		gave		afraid					
Sunday		save		complain					
holiday		brave		explain					
birthday		date							
		cage							
		escape							
		mistake							

How many words in the table above sound the same, but have different meanings?

Write them here: ……….   ……….   …………   ………..

As the words are read from the table write down how many sounds you hear next to the word in the same column. Use a pencil so we can change them if incorrect.

Note: The letters 'ay' are used as the last sound in words such as day etc.

For this sound a-e are the letters used the most.

On each worksheet I will give you words that are spelled the same, but are different sounds:

would   could   should   shoulder

As much as you have to learn the different sounds – you have to learn some words that don't fit in to the sounds as well.

Appendix 8

Work sheet number 2.

Write the words I say using the letters: ee ea e y

………..   ………..   ……….   ……….

ee			ea		
see		agree		sea		each
tree		disagree		tea		teach
three		indeed		speak		read
week		between		weak		peace
need		thirteen		real		please
feed		fourteen		leave		beautiful
feel		eighteen		reach		
sleep		nineteen		bean		
been						
e		**y**				
he		happy				
me		ugly				
we		only				
she		body				
be						

Which words sound the same, but have different meanings?

………   ……….   ………   ……….   ……….   ……….

Note:

He – me – we – she – be are the only words with the single e for this sound.

As the words are read, please write the number of sounds you hear in the column provided. Please use pencil so it can be changed if necessary.

Some difficult words best learned by sight:

rough   enough   tough

though although

thought   bought   brought   fought

cough

Appendix 9

Work sheet number 3.

Write the words I say using the following letters igh i-e   y   ie   i

……….   ……….   ……….   ……….   ……….

igh		i-e				y		ie		i	
high		like		write		by		lie		find	
night		hide		quite		my		die		kind	
light		wide		smile		try		tie		mind	
bright		time		decide		fly				child	
fight		mine		beside		why				rind	
might		nice		polite		sky				grind	
right		mice		recognise		reply					
tonight		slice				spy					
sighed		side									

List the words that sound the same, but have different meanings.

……… ……….   ………. ………...

Some words that you probably know already, but they have unusual sounds.

what   watch   was

Choose words from above table to complete these sentences:

1. I need to …………….. an essay for my exam.
2. What ………….. of the road do you drive on?
3. Put on the …………. so that I can see in the dark.
4. We drive on the …………… side of the road.
5. He …………….. because he was tired.

Appendix 10

Work sheet number 4

Write the words I say using the following letters: ow   o-e   oa   o

……….   ……… ……….   ……….

ow		o-e		oa		o	
know		broke		boat		so	
knows		choke		coat		go	
snow		smoke		float		no	
throw		whole		road		most	
blow		hole		goat			
grow		rode		moan			
show		hope		groan			
bowl		note					
borrow		nose					
follow		wrote					
pillow		stone					
tomorrow		alone					
		telephone					

List the words that sound the same, but have different meanings.

………. ……….   ………. ……….   ………. ……….   ………. ……….

From the table above complete the following sentences making any necessary changes to the spelling:

1. I had something in my throat and I could not swallow it, I was ………………

2. As I …………. my horse down the ………….., I heard a sound from the bushes, I was afraid as I was the only person there, I was ………………

3. Every driver …………… that they should wear a seat belt and so should their passengers, with …………. exceptions.

4. Can you eat a ………….. chicken or only part of it.

5. If I add oil to water it will …………. on the top.

Appendix 11

Work sheet number 5

Write the words you hear in the spaces below using the following letters:

oo u-e ew ue oe

………   ……….   ……….   ……….   ……….

oo		u-e		ew		ue	
too		flute		blew		blue	
zoo		brute		new		true	
school		cute		knew		rescue	
room		salute		threw		continue	
soon		dispute		grew		statue	
moon		pollute		flew		argue	
spoon				view		revenue	
tooth				few			
root							
shoot							
oe							
shoe							

Homophones

List the words that have the same sounds.

……… ……….   ………. ………   ………. ……….

Note these words:

to   two   too

through   threw

1. Our company's …………………. for the year was $1,000.000.
2. The …………….. about where to dump the waste was agreed upon after many arguments.
3. When the soldiers passed the queen they gave a ………………..
4. A tree gets all its nourishment and water from its ……………….

Difficult word to remember with this sound is route : The route to the mall from Khalifa A is difficult to explain.

Appendix 12

Work sheet number 6

Use the following letters in the words I say: 'ou'   'ow'

……….   ……….   ……….   ……….

ou			ow		
loud		hours		cow		tower	
pit		mound		now		power	
shout		our		how			
about		hour		down			
house		without		town			
mouse		amount		brown			
found		around		frown			
sound		trousers		drown			
ground		flour		flower			
ours				shower			

Homophones

………. ……….   ………. ……….

What sound can you match to these letters? 'ar'   'a'

ar			a	
car		park		grass	
far		dark		glass	
star		shark		class	
arm		large		fast	
harm		argue		mast	
charm		remark		last	
farm		artist		graph	
start		garden		plant	
sharp		party		path	
bar					

Here are some words that are best just to learn:

learn   earth   heart

said   because   cause

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Appendix 13

Work sheet number 7

What sounds can you match to these letters: 'ir' 'ur' 'er'

Which letters would you use for these words:

……….   ……….   ……….

ir		ur		er	
girl		hurt		her	
skirt		burn		letter	
shirt		turn		better	
dirt		nurse		wetter	
bird		purse		hamster	
third		curse		transfer	
first				offer	
firm				permission	
squirm					
whirl					
twirl					

What about these letters: 'air' 'are' 'ear'

Which letters are used in these words:

……….   ……….   ……….

air		are				ear	
air		square		beware		wear	
chair		share		compare		bear	
pair		care		rare		pear	
stair		stare		spare			
fair		bare					
repair		fare					
airport		declare					
despair		aware					

Homophones:

Which words are homophones?

………. ……….   ………. ……….   ………. ………..   ………. ……….

………. ……….

Careful of :   wear and where

                their and there

Appendix 14

Work sheet 8

What letters do we use for the sound in these words: 'oy' 'oi'

……….   ………..   ……….   ………

oy		oi	
boy		boil	
toy		spoil	
joy		choice	
enjoy		voice	
employ		noise	
destroy		point	
annoy		join	
		foil	
		toilet	
		disappoint	

What letter do we use for the sound in these words: 'ear' 'eer'

……….   ………..   ……….   ………

ear				eer	
hear		rear		cheer	
dear		spear		deer	
fear					

Homophones

……….. ……….   ………. ……….

Use these letters (grapheme) in these words: 'ire'

………..   ……….

ire							
fire		hire		inspire		retire	
spire		wire		admire		require	

Add 'ment' to require - ………………..

Add 'ing' to inspire - ………………….

Appendix 15

Work sheet number 9.

The letters c/ce match the 's' sound when:

c is followed by letters 'i' 'e' or 'y'

and the grapheme 'ce' at the end of words

Here are some samples:

circus		ice		ace	
certain		nice		face	
cereal		rice		race	
bicycle		lice		lace	
centre/center		mice		space	
cycle		price		excellent	
		twice		except	
		office		concert	
		police		concentrate	

The sound 'j' is made when the letter 'g' is followed by 'e' and 'i', also, in words with the graphemes 'ge' and 'dge'. See table below.

general		strange		marriage	
giraffe		orange		garage	
gentle		bridge		garbage	
age		ridge		luggage	
angel		wedge		baggage	
urgent		hedge		cabbage	
danger		ledge		massage	
large		pledge		cottage	
fringe		judge		village	
plunge					

Can you think of any other words to add to these tables?

Appendix 16

Work sheet number 10.

In the grapheme 'l' box on your grapheme list you will notice the graphemes 'll' and 'le'.

Here are some examples of words using these graphemes.

parallel		middle		simple
call		apple		handle
fall		little		angle
sell		cuddle		whistle
carefully		battle		triangle
hopefully		puzzle		rectangle
beautifully		giggle		
		kettle		
		candle		

Think of the sound sh indicated by graphemes 'ti' 'si' 'ci' as well as 'sh'

Here are some words using 'ti' 'si' and 'ci' - -tion –sion and -cian

ti		si		ci	
action		progression		optician	
infection		confession		Grecian	
operation		possession		beautician	
concentration		discussion		electrician	
addition					
affection					
subtraction					
celebration		**NB: Different sound**			
punctuation		conversion			
direction		revision			
relation		television			
education		decision			
imagination		division			
		explosion			

Look at the list and see other examples of this and see which column you would put them in.

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Appendix 17

Work sheet number 11.

Another look at the sh sound with '-ous' '-cious' '-tious'

famous		serious		generous	
gorgeous		furious		delicious	
jealous		curious		precious	
nervous		religious		ambitious	
enormous		courageous		cautious	
ridiculous		dangerous		precautious	

Here are some words with '-tial' '-cial'

influential		initial		confidential	
beneficial		crucial		social	
superficial		judicial		commercial	
facial					

Can you write four sentences using words from each of the tables.

1. ……………………………………………………………………………
2. ……………………………………………………………………………
……………………………………………………………………………………

3. ……………………………………………………………………………
……………………………………………………………………………………

4. ……………………………………………………………………………
……………………………………………………………………………………

Appendix 18

Work sheet number 12.

What sound matches the following graphemes? '-ent' '-ant' '-ment'

Read the words below and notice the sound:

-ent		-ant		-ment	
parent		distant		treatment	
ancient		constant		judgement	
dependent		important		argument	
violent		servant		department	
urgent		giant		enjoyment	
accident		elegant		government	
independent		extravagant		amazement	
patient				experiment	
obedient					
absent					

And the following …. '-ence'   '-ance'

'-ence'		'-ance'	
patience		distance	
impatience		importance	
violence		extravagance	
absence		elegance	
silence		fragrance	
dependence			
independence			
obedience			

Note the endings now: '-ent'   '-ant'

'-ent'		'-ant'	
patient		distant	
impatient		important	
violent		extravagant	
absent		elegant	
silent		fragrant	
dependent			
independent			
obedient			

Appendix 19

Work sheet number 13.Listen to the following words: '-ure' nature   '-or' mirror   '-our' colour.
All graphemes indicate the same sound.

Read the following words:

nature		treasure	
picture		pleasure	
mixture		injure	
adventure		failure	
temperature		terror	
capture		mirror	
furniture		behaviour	
literature		colour	

The grapheme 'ch' = both the k and sh sound

'ch' making k		stomach	
chemist		orchestra	
chaos		architect	
ache			
technical			
scheme		**'ch' making sh**	
character		machine	
knowledge		parachute	
school		brochure	
echo		schedule	
mechanical			
choir			

Some words where 'ph' = 'f'

physical		sphere	
paragraph		orphan	
photograph		pharmacy	
alphabet		geography	
elephant		nephew	
triumph			
phrase			
catastrophe			

Some words where '-que' = k '-gue' = g

antique		fatigue	
cheque		prologue	
unique		league	
picturesque		colleague	
grotesque		catalogue	

Appendix 20

Pilot Class

Results of test on vowel sounds a e i o u (First Test)

	Word	S/1	S/2	S/3	S/4	S/5	S/6	S/7	S/8	S/9	S/10	S/11	S/12	S/13	S/14	S/15	S/16	S/17	S/18	S/19	Total errors	Total Students	Error %	Right %
1	angry	a	a	a	a	a	a	a	a	a	a	a	a	a	e	a	a	a	e	a	2	19	11%	89%
2	offer	o	o	o	o	o	o	o	a	o	o	o	o	o	o	o	o	o	o	o	1	19	5%	95%
3	insects	i i	i e	i a	i i	i s	i e	a e	i i	i u	i e	i i	e i	a i	e i	i e	e i	i e	i a	i e	14	19	74%	26%
4	elegant	e	i	e	e	e	e	a	a	e	e	e	a	a	e	e	e	a	i	e	7	19	37%	63%
5	junk mail	u	u	a	a	a	u	a	u	u	u	u	u	u	a	u	u	o	u	a	7	19	37%	63%
6	advertisement	a	a	a	a	a	a	a	a	a	a	a	e	a	a	a	a	a	a	a	1	19	5%	95%
7	damage	a	i	a	a	a	a	e	u	a	a	a	a	a	e	a	a	a	e	a	5	19	26%	74%
8	gadget	a	a	u	u	a	a	e	i	a	a	a	a	a	o	a	a	a	a	e	6	19	32%	68%
9	flat	a	a	a	a	a	a	e	a	a	a	a	a	a	a	a	a	u	e	a	3	19	16%	84%
10	quality	a	a	e	i	i	i	i	a	i	i	i	i	u	a	i	i	e	i	e	8	19	42%	58%
11	bacteria	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	e	a	1	19	5%	95%
12	office	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	0	19	0%	100%
13	drip	i	a	i	i	u	i	u	u	i	i	i	i	a	i	i	i	i	u	u	7	19	37%	63%
14	ingredients	i	i	i	i	e	i	i	i	i	e	i	i	a	e	e	i	i	i	i	5	19	26%	74%
15	banging	a	a	u	u	a	a	a	a	a	a	a	a	a	a	a	a	a	e	e	4	19	21%	79%
16	control	o	o	u	o	o	o	e	a	o	o	o	a	o	u	o	o	u	o	a	7	19	37%	63%
17	salary	a	i	a	a	a	a	a	i	a	a	a	a	a	i	a	a	a	e	a	4	19	21%	79%
18	stick	u	u	i	i	u	u	e	u	i	i	i	i	i	e	i	i	i	e	u	9	19	47%	53%
19	episode	e	a	i	i	a	a	e	a	e	e	e	e	a	e	e	e	e	a	a	10	19	53%	47%
20	cut up	u u	u u	a u	a u	u u	u u	u u	u u	a u	a u	u u	a u	u u	a u	a u	u u	a u	a u	u u	9	19	47%	53%
	Incorrect	3	7	8	6	6	2	9	11	2	2	1	5	6	12	2	2	7	11	9				
	Total Students	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20				
	Error %	15	35	40	30	30	10	45	55	10	10	5	25	30	60	10	10	35	55	45				
	Right %	85	65	60	70	70	90	55	45	90	90	95	75	70	40	90	90	65	45	55				

555%	29%
1345%	71%

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Appendix 21

Test 1. Write the words in the correct column trying to use the correct spelling.

ay a-e ai eigh a	ee ea e y	igh i-e y ie i	ow o-e oa o	oo u-e ew ue oe
stray	indeed	fight	blow	room
escape	happy	mice	hope	cute
explain	be	why	goat	few
weight	leave	die	most	rescue
apron	between	mind	moan	shoe

Appendix 22

Test 2. Write the words in the correct column trying to use the correct spelling.

ay a-e ai eigh a	ee ea e y	igh i-e y ie i	ow o-e oa o	oo u-e ew ue oe
mistake	sleep	night	throw	school
table	reach	mine	choke	flute
train	she	decide	float	grew
complain	body	reply	go	argue
delay	peace	child	stone	canoe

Appendix 23

Individual results from first and second Phoneme/Grapheme tests - Pilot class - **Phonemes**

Student	ay a-e ai eigh a		ee ea e y		igh i-e y ie i		ow o-e oa o		oo u-e ew ue oe			1st test				2nd test		
	1st test	2nd test	1st test	2nd test	1st test	2nd test	1st test	2nd test	1st test	2nd test		Total Correct	Max Score	%		Total Correct	Max Score	%
1	4	a	4	a	2	a	3	a	3	a		16	25	64%		a	25	a
2	4	0	3	4	1	2	2	5	5	3		15	25	60%		14	25	56%
3	a	a	a	a	a	a	a	a	a	a		a	25	a		a	25	a
4	3	4	1	3	4	3	2	2	0	2		10	25	40%		14	25	56%
5	1	a	3	a	0	a	1	a	1	a		6	25	24%		a	25	a
6	a	a	a	a	a	a	a	a	a	a		a	25	a		a	25	a
7	0	a	1	a	0	a	2	a	3	a		6	25	24%		a	25	a
8	1	1	3	4	0	2	4	5	4	2		12	25	48%		14	25	56%
9	a	a	a	a	a	a	a	a	a	a		a	25	a		a	25	a
10	a	a	a	a	a	a	a	a	a	a		a	25	a		a	25	a
11	3	2	3	4	3	1	3	1	4	2		16	25	64%		10	25	40%
12	0	2	2	2	2	4	3	3	2	1		9	25	36%		12	25	48%
13	3	2	4	2	3	2	4	3	5	4		19	25	76%		13	25	52%
14	a	a	a	a	a	a	a	a	a	a		a	25	a		a	25	a
15	1	1	3	3	2	2	3	3	3	2		12	25	48%		11	25	44%
16	1	2	3	5	1	3	4	4	4	3		13	25	52%		17	25	68%
17	1	1	0	3	2	3	2	3	2	3		7	25	28%		13	25	52%
18	3	2	3	4	0	1	3	4	4	4		13	25	52%		15	25	60%
19	2	2	2	3	1	2	3	2	4	4		12	25	48%		13	25	52%
20	4	4	2	5	1	2	5	5	4	3		16	25	64%		19	25	76%
21	a	3	a	4	a	1	a	5	a	3		a	25	a		16	25	64%
22	2	3	1	3	1	2	2	1	1	1		7	25	28%		10	25	40%
Actual Score	33	29	38	49	23	30	46	46	49	37		189				191		
Max Score	550	550	550	550	550	550	550	550	550	550		550				550		
Class Average	6%	5%	7%	9%	4%	5%	8%	8%	9%	7%		34%				35%		

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Appendix 24

Individual results from first and second Phoneme/Grapheme tests - Pilot class - Graphemes

Student	ay a-e ai eigh a		ee ea e y		igh i-e y ie i		ow o-e oa o		oo u-e ew ue oe		1st test				2nd test		
	1st test	2nd test	1st test	2nd test	1st test	2nd test	1st test	2nd test	1st test	2nd test	Total Correct	Max Score	%		Total Correct	Max Score	%
1	1	a	1	a	1	a	1	a	2	a	6	25	24%		a	25	a
2	2	0	1	2	1	2	1	3	3	2	8	25	32%		9	25	36%
3	a	a	a	a	a	a	a	a	a	a	a	25	a		a	25	a
4	1	0	1	2	0	1	1	1	0	1	3	25	12%		5	25	20%
5	0	a	3	a	0	a	1	a	1	a	5	25	20%		a	25	a
6	a	a	a	a	a	a	a	a	a	a	a	25	a		a	25	a
7	0	a	0	a	0	a	1	a	1	a	2	25	8%		a	25	a
8	0	0	1	2	0	1	1	2	2	1	4	25	16%		6	25	24%
9	a	a	a	a	a	a	a	a	a	a	a	25	a		a	25	a
10	a	a	a	a	a	a	a	a	a	a	a	25	a		a	25	a
11	1	1	1	3	2	1	1	1	1	0	6	25	24%		6	25	24%
12	0	0	1	2	2	1	2	1	1	0	6	25	24%		4	25	16%
13	0	1	3	2	1	1	2	2	2	2	8	25	32%		8	25	32%
14	a	a	a	a	a	a	a	a	a	a	a	25	a		a	25	a
15	0	0	1	2	1	1	1	1	1	1	4	25	16%		5	25	20%
16	1	2	3	4	1	2	3	3	2	2	10	25	40%		13	25	52%
17	1	0	0	2	0	1	0	3	0	1	1	25	4%		7	25	28%
18	1	2	3	3	0	1	1	3	1	2	6	25	24%		11	25	44%
19	1	2	2	2	1	2	1	1	2	3	6	25	24%		10	25	40%
20	1	1	1	3	0	1	0	3	1	1	3	25	12%		9	25	36%
21	a	0	a	3	a	0	a	3	a	0	a	25	a		6	25	24%
22	1	2	1	1	1	1	2	1	1	0	6	25	24%		5	25	20%
Actual Score	11	11	23	33	11	16	19	28	21	16	84				104		
Max Score	550	550	550	550	550	550	550	550	550	550	550				550		
Class Average	2%	2%	4%	6%	2%	3%	3%	5%	4%	3%	15%				19%		

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Appendix 25

Code Knowledge Cue Card

b	x	oa
c	y	ow
d	z	igh
f	i	eigh
g	e	ay
h	a	ie
j	o	aw
k	u	ee
l	sh	ey
m	ch	ue
n	th	ew
p	ck	au
r	qu	oo
s	ce	ui
t	ai	oy
v	ou	oi
w	ea	

Appendix 26

Code Knowledge Test and Key

b	boy	x	fox 'ks'/exit 'gz'	oa	boat
c	cat/city	y	yes/happy/fly	ow	now/snow
d	dog	z	zipper	igh	night
f	fat	i	rip	eigh	eight/height
g	got/gentle	e	net	ay	play
h	hop	a	mat	ie	die/chief
j	job	o	mop	aw	saw
k	kid	u	nut	ee	seen
l	lap	sh	ship	ey	key/they
m	mop	ch	chip	ue	blue
n	nod	th	this/Thursday	ew	few/new
p	pat	ck	duck	au	Augusr
r	rat	qu	quick 'kw'	oo	wood/moon
s	sat	ce	nice	ui	suit
t	top	ai	rain	oy	boy
v	give	ou	outgroup/touch	oi	soil
w	with	ea	each/steak/bread		

Appendix 27

Phoneme Segmentation Test

Part One   **Part Two**

dog   _ _ _   frog   _ _ _ _

hat   _ _ _   black   _ _ _ _

pin   _ _ _   nest   _ _ _ _

pot   _ _ _   trip   _ _ _ _

rat   _ _ _   milk   _ _ _ _

nut   _ _ _   drum   _ _ _ _

Appendix 28

Nonsense Word Decoding

1. dap

2. kug

3. lomramp

4. kagpeb

5. meminum

Appendix 29

Questionnaire (end of course)

Please answer the following questions making sure you do not miss any out.

1. Can you match sounds to individual letters? Yes □   No □ Sometimes □

2. Can you match sounds to groups of letters? Yes □   No □ Sometimes □

3. Has the course helped you match sounds to letters? Yes □   No □

4. When you come across a word in reading that you do not know, do you:

   (i) guess the word? Yes □   No □ Sometimes □

   (ii) try and work the word out using a sound to letter or letters method?

Yes □   No □ Sometimes □

5. When you are writing and you do not know the spelling of a word, do you:

   (i) try to match the sound of the word to letters? Yes □   No □ Sometimes □

   (ii) guess what the word looks like? Yes □   No □ Sometimes □

6. Do you know more sound to letter combinations than you knew before the course?

Yes □   No □

7. Did you take time during the course to learn these sound to letter combinations?

Yes □   Some of them □ No □

8. Have you learned all the sounds we have covered? Yes □   No □

9. Would you like these lessons to continue next semester? Yes □   No □

10. Whether your answer is yes or no, please write the reason for this answer

below…………………………………………………………………………………………

…………………………………………………………………………….. 11. Do you

think one lesson a week is enough? Yes □   No □

12. Do you feel these lessons have helped you with your English? Yes □ No □

13. If yes, in which areas has it helped: Please put a mark next to the box:

Spelling □   Reading □   Writing □   Speaking □   Listening □

Vocabulary □   Other: …………..

14. Do you find it difficult to break a word up into sounds? Yes □   No □

15. Is it easier now that you have had this class? Yes □   No □

16. Would you recommend these lessons to other classes? Yes □   No □

17. If you have anything you would like to say about the course please do so:

Thank you for completing the questionnaire.

Appendix 30

Sample of Word Attack (First Test) marking sheet.
Taken and adapted from Woodcock 1998.

	Item			Item	
1	ree		36	mieb	
2	ip		37	squow	
3	din		38	pelnidlun	
4	ig		39	hopdlhup	
5	dat		40	untroikest	
6	tay		41	lunap	
7	yee		42	cedge	
8	rayed		43	pnir	
9	mem		44	ceisminadolt	
10	oft		45	byrcal	
11	glack				
12	hend				
13	shum				
14	eb				
15	dreek				
16	weaf				
17	knap				
18	ful's				
19	sess				
20	chur				
21	zoath				
22	rejune				
23	depine				
24	viv				
25	yox				
26	rhunk				
27	throbe				
28	sloy				
29	sprawn't				
30	quox				
31	phet				
32	brecked				
33	wrault				
34	darlanker				
35	whumb				

Appendix 31

Sample of Word Attack (Second Test) marking sheet.
Taken and adapted from Woodcock 1998.

	Item			Item	
1	dee		36	mancingful	
2	ap		37	wrey	
3	ift		38	bafmotbem	
4	raff		39	translibsodge	
5	bim		40	monglustamer	
6	nan		41	vauge	
7	un		42	gnouthe	
8	fay		43	quiles	
9	gat		44	cyr	
10	roo		45	pnomocher	
11	oss				
12	pog				
13	poe				
14	weat				
15	plip				
16	dud's				
17	shab				
18	whie				
19	vunhip				
20	nigh				
21	bufty				
22	sy				
23	straced				
24	chad				
25	than't				
26	tadding				
27	twem				
28	laip				
29	adjex				
30	gouch				
31	yeng				
32	zirdn't				
33	gaked				
34	knoink				
35	cigbet				

Appendix 32

Sample of Word Identification (First Test) marking
sheet.
Taken and adapted from Woodcock 1998.

	Word			Word			Word	
1	go		36	river		71	epidemic	
2	the		37	great		72	tranquillity	
3	me		38	wonderful		73	sympathise	
4	not		39	should		74	hindrance	
5	red		40	money		75	zodiac	
6	box		41	lemon		76	plausible	
7	look		42	without		77	limousine	
8	do		43	exit		78	embassy	
9	big		44	chew		79	velocity	
10	yes		45	question		80	abdominal	
11	this		46	piece		81	alienate	
12	bee		47	strange		82	proximity	
13	green		48	brought		83	amidships	
14	fly		49	cattle		84	baroness	
15	hot		50	groan		85	vivacious	
16	bus		51	dangerous		86	lethargic	
17	ten		52	journey		87	transient	
18	some		53	major		88	edifice	
19	here		54	garage		89	ptomaine	
20	black		55	cruel		90	verbatim	
21	bear		56	wreck		91	itinerary	
22	old		57	entrance		92	jujitsu	
23	house		58	budget		93	grandiose	
24	eat		59	pioneer		94	amiable	
25	leg		60	inquire		95	xerography	
26	away		61	wealth		96	narcissism	
27	time		62	allowable		97	subsidiary	
28	new		63	ache		98	quixotic	
29	people		64	vacant		99	obelisk	
30	sheep		65	quench		100	consanguinity	
31	everyone		66	extinguish		101	déclassé	
32	date		67	prudent		102	psychical	
33	warm		68	circumstance		103	zoophile	
34	low		69	occasionally		104	epigraphist	
35	family		70	flamboyant		105	facetious	
						106	shillelagh	

Appendix 33

Sample of Word Identification (Second Test)
marking sheet.
Taken and adapted from Woodcock
1998.

	Word			Word			Word	
1	is		36	ground		71	spectacular	
2	you		37	airplane		72	cologne	
3	and		38	chair		73	miser	
4	up		39	because		74	hysterical	
5	cat		40	beautiful		75	pedestrian	
6	stop		41	slowly		76	yacht	
7	come		42	watch		77	mathematician	
8	jump		43	early		78	almanac	
9	help		44	heavy		79	relativity	
10	book		45	already		80	instigator	
11	play		46	laugh		81	prognosis	
12	sun		47	hurry		82	judicious	
13	blue		48	largest		83	causation	
14	two		49	expert		84	vernacular	
15	no		50	evening		85	alkali	
16	boy		51	passage		86	philanthropist	
17	little		52	receive		87	naïve	
18	bed		53	gasoline		88	inordinate	
19	milk		54	calendar		89	carnivorous	
20	car		55	human		90	artesian	
21	swim		56	twilight		91	quintessence	
22	fast		57	certain		92	heterogeneous	
23	down		58	dwarf		93	cygnet	
24	rug		59	furnace		94	expostulate	
25	with		60	amazement		95	tableau	
26	find		61	torpedo		96	zymolysis	
27	said		62	vehicle		97	tuberculosis	
28	night		63	departure		98	surreptitious	
29	sleep		64	yardage		99	internecine	
30	after		65	urgent		100	taupe	
31	woman		66	mechanic		101	quadruped	
32	summer		67	wounded		102	epistrophe	
33	table		68	zenith		103	dossier	
34	work		69	petroleum		104	picayune	
35	stove		70	stigma		105	oenology	
						106	zeitgeist	

Appendix 34

First Spelling Test

1. Yes
2. Bed
3. Let
4. Us
5. went
6. much
7. next
8. spend
9. who
10. shake
11. eight
12. strong
13. pile
14. knife
15. knew
16. tardy
17. nineteen
18. section
19. signal
20. expect
21. canyon
22. district

23. fountain
25. terrible
24. legal
25. terrible

Taken and adapted from a test "Form A Words" in Larsen et al. (1999, p. 58).

Appendix 35

Second Spelling Test

1. she
2. stop
3. him
4. name
5. plant
6. two
7. spring
8. storm
9. myself
10. when
11. people
12. hardly
13. able
14. everyone
15. uncle
16. strange
17. sure
18. brandish
19. hospital
20. forty
21. enough
22. entire

23. pardon
25. electricity
24. political
25. electricity

Taken and adapted from a test "Form B Words" in Larsen et al. (1999, p. 59).

Appendix 36
Test results for Treatment Class 1 - Start of semester September 2011 - December 2011

Student	Word Attack			Word Identification			Spelling		
	Raw Score	Total	Percentage	Raw Score	Total	Percentage	Raw Score	Total	Percentage
1	15	45	33	43	106	41	3	25	12
2	4	45	9	25	106	24	4	25	16
3	a	45	a	a	106	a	a	25	a
4	11	45	24	37	106	35	7	25	28
5	8	45	18	30	106	28	1	25	4
6	16	45	36	54	106	51	3	25	12
7	8	45	18	46	106	43	5	25	20
8	6	45	13	47	106	44	6	25	24
9	19	45	42	46	106	43	3	25	12
10	15	45	33	37	106	35	3	25	12
11	7	45	16	46	106	43	4	25	16
12	9	45	20	33	106	31	2	25	8
13	6	45	13	29	106	27	1	25	4
14	0	45	0	5	106	5	1	25	4
15	5	45	11	36	106	34	4	25	16
16	4	45	9	26	106	25	3	25	12
17	7	45	16	37	106	35	4	25	16
18	5	45	11	37	106	35	a	25	a
19	6	45	13	27	106	25	1	25	4
20	a	45	a	a	106	a	6	25	24
21	5	45	11	43	106	41	3	25	12
	156	945	17	684	2226	31	64	525	12

Appendix 37
Test results for Treatment Group 1 - End of semester September 2011 - December 2011

Student	Word Attack			Word Identification			Spelling		
	Raw Score	Total	Percentage	Raw Score	Total	Percentage	Raw Score	Total	Percentage
1	24	45	53	49	106	46	7	25	28
2	3	45	7	33	106	31	6	25	24
3	a	45	a	a	106	a	a	25	a
4	22	45	49	45	106	42	12	25	48
5	9	45	20	26	106	25	6	25	24
6	16	45	36	44	106	42	9	25	36
7	14	45	31	42	106	40	8	25	32
8	15	45	33	47	106	44	5	25	20
9	23	45	51	44	106	42	11	25	44
10	18	45	40	40	106	38	10	25	40
11	20	45	44	57	106	54	11	25	44
12	a	45	a	a	106	a	4	25	16
13	5	45	11	29	106	27	1	25	4
14	a	45	a	a	106	a	a	25	a
15	11	45	24	39	106	37	8	25	32
16	8	45	18	35	106	25	7	25	28
17	a	45	a	37	106	33	a	25	a
18	17	45	38	49	106	46	7	25	28
19	11	45	24	29	106	27	4	25	16
20	10	45	22	41	106	43	10	25	40
21	18	45	40	48	106	45	7	25	28
	244	945	26	734	2226	33	133	525	25

Appendix 38

Results of mixed Phoneme / Grapheme test- Treatment Class 1 September 2011 - December 2011

	/ay/a-e/ai/eigh/a/		/ee/ea/e/y/		/igh/i-e/y/ie/i/		/ow/o-e/oa/o/		/oo/u-e/ew/ue/oe/		Individual Results	
	Correct Phoneme column	Correct Grapheme	Correct Phoneme column	Correct Grapheme	Correct Phoneme column	Correct Grapheme	Correct Phoneme column	Correct Grapheme	Correct Phoneme column	Correct Grapheme	Correct Phoneme column	Correct Grapheme
Words	4		4		4		4		4		20	20
Student												
1	2	0	3	2	3	2	2	1	3	3	16	8
2	3	2	3	2	4	1	4	2	3	2	17	9
3	a	a	a	a	a	a	a	a	a	a	a	a
4	4	2	3	2	4	2	4	3	3	2	18	11
5	1	0	3	3	1	0	5	3	2	1	12	7
6	1	0	2	1	3	2	3	2	2	2	11	7
7	1	1	3	3	1	1	5	1	2	2	12	8
8	1	0	3	2	3	2	3	2	3	2	13	8
9	1	0	3	3	3	1	3	1	1	1	11	6
10	1	0	3	2	4	2	2	2	3	3	13	9
11	2	0	2	2	5	2	4	2	3	3	16	9
12	a	a	a	a	a	a	a	a	a	a	a	a
13	0	0	1	1	2	0	3	0	3	3	9	4
14	1	0	2	2	4	1	3	2	2	2	12	7
15	1	0	2	2	5	2	4	1	3	2	15	7
16	1	1	1	0	0	0	3	1	0	0	5	2
17	a	a	a	a	a	a	a	a	a	a	a	a
18	2	0	1	1	3	1	4	0	2	2	12	4
19	a	a	a	a	a	a	a	a	a	a	a	a
20	1	0	2	1	4	2	2	2	2	2	11	7
21	3	1	3	1	3	3	4	1	2	2	15	8
Actual class Totals	26	7	40	30	52	24	58	26	39	34	218	121
Possible class Total	84	84	84	84	84	84	84	84	84	84	420	420
Percentage Correct	31%	8%	48%	36%	62%	29%	69%	31%	46%	40%	52%	29%

288

Appendix 39

Test results for Treatment Class 2 - Start of semester

Student	Word Attack			Word Identification			Spelling		
	Raw Score	Total	Percentage	Raw Score	Total	Percentage	Raw Score	Total	Percentage
1	a	45	a	a	106	a	a	25	a
2	10	45	22	28	106	26	0	25	0
3	17	45	38	54	106	51	7	25	28
4	a	45	a	a	106	a	4	25	16
5	13	45	13	38	106	36	7	25	28
6	4	45	9	28	106	26	3	25	12
7	7	45	16	40	106	38	5	25	20
8	5	45	11	27	106	25	a	25	a
9	8	45	18	43	106	41	4	25	16
10	3	45	7	17	106	16	7	25	28
11	16	45	36	39	106	37	5	25	20
12	12	45	27	47	106	44	7	25	28
13	11	45	24	44	106	42	7	25	28
14	4	45	9	30	106	28	2	25	8
15	a	45	a	a	106	a	3	25	12
16	a	45	a	a	106	a	4	25	16
17	13	45	29	36	106	34	2	25	8
18	7	45	16	46	106	43	7	25	28
19	8	45	18	35	106	33	5	25	20
	138	855	16	552	2014	27	79	475	17

Appendix 40

Test results for Treatment Class 2 - End of semester

Student	Word Attack			Word Identification			Spelling		
	Raw Score	Total	Percentage	Raw Score	Total	Percentage	Raw Score	Total	Percentage
1	a	45	a	a	106	a	a	25	a
2	a	45	a	a	106	a	9	25	36
3	10	45	22	45	106	42	a	25	a
4	13	45	29	48	106	45	11	25	44
5	21	45	47	37	106	35	8	25	32
6	5	45	11	34	106	32	10	25	40
7	12	45	27	44	106	42	14	25	56
8	5	45	11	33	106	31	7	25	28
9	12	45	27	41	106	39	a	25	a
10	9	45	20	33	106	31	11	25	44
11	a	45	a	a	106	a	8	25	32
12	14	45	31	38	106	36	10	25	40
13	25	45	56	48	106	45	14	25	56
14	11	45	24	34	106	32	10	25	40
15	5	45	11	30	106	28	4	25	16
16	5	45	11	26	106	25	4	25	16
17	17	45	38	40	106	38	9	25	36
18	17	45	38	51	106	48	10	25	40
19	10	45	22	36	106	34	11	25	44
	191	855	22	618	2014	31	150	475	32

Appendix 41

Test results for Treatment Group 3 - Start of semester

Student	Word Attack			Word Identification			Spelling		
	Raw Score	Total	Percentage	Raw Score	Total	Percentage	Raw Score	Total	Percentage
1	4	45	9	37	106	35	3	25	12
2	3	45	7	33	106	31	4	25	16
3	5	45	11	29	106	27	6	25	24
4	16	45	36	44	106	42	6	25	24
5	15	45	33	47	106	44	9	25	36
6	a	45	a	a	106	a	a	25	a
7	6	45	13	40	106	38	3	25	12
8	8	45	18	41	106	39	4	25	16
9	12	45	27	33	106	31	2	25	8
10	7	45	16	39	106	37	7	25	28
11	2	45	4	21	106	20	1	25	4
12	a	45	a	a	106	a	a	25	a
13	a	45	a	a	106	a	a	25	a
14	8	45	18	22	106	21	6	25	24
15	10	45	22	44	106	42	5	25	20
16	12	45	27	42	106	40	7	25	28
	108	720	16	472	1696	27	63	400	17

Appendix 42

Test results for Treatment Group 3 - End of semester

Student	Word Attack			Word Identification			Spelling		
	Raw Score	Total	Percentage	Raw Score	Total	Percentage	Raw Score	Total	Percentage
1	9	45	20	40	106	38	10	25	40
2	6	45	13	33	106	31	6	25	24
3	a	45	a	a	106	a	8	25	32
4	13	45	29	44	106	47	11	25	44
5	10	45	22	44	106	47	16	25	64
6	6	45	13	42	106	40	11	25	44
7	8	45	18	46	106	43	7	25	28
8	17	45	38	44	106	42	7	25	28
9	11	45	24	37	106	35	13	25	52
10	10	45	22	42	106	40	14	25	56
11	8	45	18	18	106	17	8	25	36
12	10	45	22	45	106	42	10	25	40
13	11	45	24	40	106	38	9	25	36
14	11	45	24	42	106	40	15	25	60
15	14	45	31	38	106	36	7	25	28
16	23	45	51	46	106	43	7	25	28
	191	855	22	618	2014	31	150	475	32

Appendix 43

Results of mixed Phoneme / Grapheme test- Treatment Class 3

	/ay/a-e/ai/eigh/a/		/ee/ea/e/y/		/igh/i-e/y/ie/i/		/ow/o-e/oa/o/		/oo/u-e/ew/ue/oe/		Individual Results	
	Correct Phoneme column	Correct Grapheme	Correct Phoneme column	Correct Grapheme	Correct Phoneme column	Correct Grapheme	Correct Phoneme column	Correct Grapheme	Correct Phoneme column	Correct Grapheme	Correct Phoneme column	Correct Grapheme
Words	5		5		5		5		5		25	25
Student												
1	3	2	4	1	0	0	3	1	2	1	12	5
2	2	1	2	2	0	0	3	1	2	1	9	5
3	a	a	a	a	a	a	a	a	a	a	a	a
4	1	1	4	2	1	0	4	1	2	1	12	5
5	4	1	4	3	2	1	3	1	3	2	16	8
6	1	0	3	2	2	0	5	1	3	1	14	4
7	1	0	1	0	0	0	1	1	2	1	5	2
8	3	0	5	2	3	1	4	1	4	1	19	5
9	1	0	2	1	2	0	4	1	3	1	12	3
10	3	3	4	2	3	3	2	1	4	1	17	10
11	2	2	2	1	0	0	3	1	1	1	8	5
12	2	1	4	2	2	1	3	2	3	0	14	6
13	1	0	3	1	1	0	3	2	2	1	10	4
14	2	2	3	1	3	1	2	1	2	1	12	6
15	1	1	3	2	3	1	3	2	2	2	12	8
16	2	1	3	2	2	0	3	1	3	2	13	6
Actual class Totals	29	15	47	24	24	8	46	18	38	17	185	82
Possible class Total	80	80	80	80	80	80	80	80	80	80	400	400
Percentage Correct	36%	19%	59%	30%	30%	10%	58%	23%	48%	21%	46%	21%

Appendix 44

Test results for Comparison Group 1 - Start of semester

Student	Word Attack			Word Identification			Spelling		
	Raw Score	Total	Percentage	Raw Score	Total	Percentage	Raw Score	Total	Percentage
1	12	45	27	43	106	41	10	25	40
2	5	45	11	43	106	41	a	25	a
3	1	45	2	7	106	7	7	25	28
4	13	45	29	45	106	42	6	25	24
5	15	45	33	54	106	51	7	25	28
6	13	45	29	49	106	46	8	25	32
7	19	45	42	45	106	42	7	25	28
8	4	45	9	35	106	33	7	25	28
9	7	45	16	40	106	38	a	25	a
10	12	45	27	42	106	40	7	25	28
11	11	45	24	43	106	41	7	25	28
	112	495	16	446	1166	27	66	275	17

Appendix 45

Test results for Comparison Group 1- End of semester

Student	Word Attack			Word Identification			Spelling		
	Raw Score	Total	Percentage	Raw Score	Total	Percentage	Raw Score	Total	Percentage
1	a	45	a	a	106	a	a	25	a
2	a	45	a	a	106	a	a	25	a
3	3	45	7	6	106	6	2	25	8
4	10	45	22	43	106	41	14	25	56
5	17	45	38	44	106	42	14	25	56
6	21	45	47	62	106	58	11	25	44
7	9	45	20	44	106	42	10	25	40
8	10	45	22	36	106	34	a	25	a
9	13	45	29	41	106	39	9	25	36
10	13	45	29	47	106	44	17	25	68
11	15	45	33	39	106	37	8	25	36
	191	855	22	618	2014	31	150	475	32

Appendix 46

Test results for Comparison Group 2- Start of semester

Student	Word Attack			Word Identification			Spelling		
	Raw Score	Total	Percentage	Raw Score	Total	Percentage	Raw Score	Total	Percentage
1	18	45	40	41	106	39	4	25	16
2	0	45	0	5	106	5	1	25	4
3	4	45	9	9	106	8	0	25	0
4	9	45	20	49	106	46	5	25	20
5	2	45	4	41	106	39	6	25	24
6	4	45	9	31	106	29	4	25	16
7	7	45	16	43	106	41	a	25	a
8	1	45	2	29	106	27	2	25	8
9	15	45	33	48	106	45	11	25	44
10	5	45	11	38	106	36	2	25	8
11	5	45	11	26	106	25	0	25	0
12	a	45	a	a	106	a	4	25	16
Total	70	540	155	360	1272	340	39	300	156

Appendix 47

Test results for Comparison Group 2- End of semester

Student	Word Attack			Word Identification			Spelling		
	Raw Score	Total	Percentage	Raw Score	Total	Percentage	Raw Score	Total	Percentage
1	24	45	53	48	106	45	11	25	44
2	3	45	7	6	106	6	3	25	12
3	8	45	18	23	106	22	5	25	20
4	22	45	49	52	106	49	14	25	56
5	8	45	18	47	106	44	9	25	36
6	9	45	20	37	106	35	6	25	24
7	12	45	27	42	106	40	7	25	28
8	9	45	20	38	106	36	2	25	8
9	29	45	64	68	106	64	21	25	84
10	a	45	a	a	106	a	7	25	28
11	8	45	18	30	106	28	3	25	12
12	8	45	18	36	106	34	5	25	20
Total	140	540	312	427	1272	403	93	300	372

Appendix 48

Test results for Comparison Group 3- Start of semester

Student	Word Attack			Word Identification			Spelling		
	Raw Score	Total	Percentage	Raw Score	Total	Percentage	Raw Score	Total	Percentage
1	7	45	16	35	106	33	2	25	8
2	26	45	58	54	106	51	11	25	44
3	9	45	20	48	106	45	10	25	40
4	10	45	22	34	106	32	4	25	16
5	14	45	31	34	106	32	6	25	24
6	7	45	16	34	106	32	3	25	12
7	18	45	40	50	106	47	5	25	20
8	12	45	27	41	106	39	5	25	20
9	14	45	31	49	106	46	9	25	36
10	19	45	42	36	106	34	8	25	32
11	18	45	40	47	106	44	9	25	36
Total	343	495	343	462	1166	435	72	275	288

Appendix 49

Test results for Comparison Group 3- End of semester

Student	Word Attack			Word Identification			Spelling		
	Raw Score	Total	Percentage	Raw Score	Total	Percentage	Raw Score	Total	Percentage
1	7	45	16	36	106	34	5	25	20
2	25	45	56	57	106	54	11	25	44
3	10	45	22	41	106	39	10	25	40
4	7	45	16	36	106	34	9	25	36
5	8	45	18	33	106	31	9	25	36
6	8	45	18	28	106	26	10	25	40
7	11	45	24	47	106	44	9	25	36
8	11	45	24	40	106	38	2	25	8
9	14	45	31	47	106	44	10	25	40
10	8	45	18	49	106	46	10	25	40
11	12	45	27	48	106	45	12	25	48
Total	121	495	270	462	1166	435	97	275	388

Appendix 50

Teaching Sound Spelling Partnerships to Low Level Students Using the Material Created by Linda Graham. By Denise Ozdeniz.

Class Profile

I used Linda Graham's 'Sound Spelling Partnership' materials with 3 Level 1 classes in the academic year 2016-2017. Each class had approximately 20 students who were admitted to the class with a CEFR band of A1. They were emergent readers and writers, although they had no difficulty in scribing as this is one aspect of English that is concentrated on in the public school system in the UAE. Each course was 7 weeks long and students devoted 1 or 2 of their 50 minute lessons of English to the worksheets and corresponding materials. As the class contained about 50% of students repeating Level 1, some students were exposed to the materials for 14 weeks. This was equivalent to the number of weeks Linda exposed her students to the materials in 2012.

The difference between the class that Linda taught using the materials and my classes is that in 2012 students were admitted to college with a CEPA score of 150 and now they are admitted with a CEPA score of as low as 90. In other words, students have CEPA scores between 90 and 150 with the average score being 135 (CEFR A1)

How I adapted Linda's Materials and the Reason for it

When I initially ran Linda's materials through a vocabulary profiler (http://vocabkitchen.com/profiler/cefr), I saw that her initial mixed sound test and the early worksheets comprised of lexical items that were beyond the scope of my students. Only 36% (9) of the 25 test items were at the students' A1 level. The students have weekly vocabulary lists and quizzes, but only 'most' and 'explain'

appeared   on   them   from   Linda's   A2   list.

Words in the text by CEFR Level

| Sort A1: 36% | Sort A2: 20% | Sort B1: 28% | Sort B2: 0% | Sort C1: 0% | Sort C2: 0% |

[1] be	[1] explain	[1] blow
[1] between	[1] few	[1] escape
[1] blue	[1] hope	[1] fight
[1] die	[1] mice	[1] indeed
[1] happy	[1] most	[1] mind
[1] leave		[1] rescue
[1] room		[1] weight
[1] shoe		
[1] why		

| Sort Off List Words: 16% |

[1] apron
[1] goat
[1] moan
[1] stray

I therefore decided that the test would not produce an accurate picture of the students' ability. Instead, I gave students a spelling test using mainly A1 words and some A2 words that were on their 180 long word list. They were expected to recognize these lexical items and use them productively in a writing exam by week 7. Due to the low level of English and the limited time, I decided to concentrate on the difference between the long and short vowel sounds and the ways of spelling a/ e/ I and o.

Linda's early worksheets on vowel sounds contained mainly A1 and A2 vocabulary items as demonstrated in the vocabulary profile below.

Worksheet 2: ee/ea/e/y

Words in the text by CEFR Level

Sort A1: 71% | Sort A2: 5% | Sort B1: 17% | Sort B2: 0% | Sort C1: 0% | Sort C2: 0%

[3] be
[3] beautiful
[3] been
[3] between
[3] body
[3] each
[3] eighteen
[3] feel
[3] fourteen
[3] happy
[3] he
[3] leave
[3] me
[3] need
[3] nineteen
[3] only
[3] please
[3] read
[3] sea
[3] see
[3] she
[3] sleep
[3] speak
[3] tea
[3] teach
[3] thirteen
[3] three
[3] tree
[3] we

[3] agree
[3] real

[3] disagree
[3] feed
[3] indeed
[3] peace
[3] reach
[3] ugly
[3] weak

There was an excellent match between vocabulary items that students encountered daily and therefore perceived to be useful words to spell. This was important as students could not understand that they were looking for spelling patterns initially. Their frame of reference was to be able to spell words in isolation as that is what they were used to doing at school. It was not until week 5 or 6 that I could see a change in some students understanding of the sound system operating in English and therefore their need to look for patterns.

Linda's materials focused on up to 4 different spelling sound partnerships at a time and I believed this was too much for my students because of their limited lexis and study skills. We had no common language of discuss meta cognition and thus an increased awareness of linguistics (phonics and graphemes) on the part of the students had to been acquired through 'learning by doing'.

Hence at first, I focused on the short vowel sound 'e' and the long sound ee and ea.

Initially, I removed Linda's first exercise in which students needed to write down the words read out by the teacher, as I wanted to build confidence and have students get as many parts correct as possible, in order to build up confidence. Once, they had

been exposed to phonic grapheme relationships for several hours, I repeated the same exercise again and added Linda's initial diagnostic exercise in which she asks students to write down the words she says. I actually added a spelling test to the final step of the work when initially introducing a sound spelling partnership to students. In this way, I could check their progress and they could see that they were beginning to master patterns. During these lesson final spelling tests, most students subvocalized the words and some even used their fingers to measure their mouths and see if they were making a short or long e according to how wide their mouths were open. Students also became more aware of homophones such as sea and see. They realized that their lip positions had not changed and then they needed to rely on other mnemonics such as ' you see with your eyes and eye and see have two ees' to spell correctly. Linda's material made students aware of homophones for the first time. Her worksheets highlight them and students realized that it was not that they were mispronouncing or hearing a word, but they there were more than one way of representing the long e sound in English or the long a sound as in weight and wait.

The main variation on Linda's work apart from limiting the number of spelling patterns presented at once, was to incorporate readings and exercises from Study Ladder (https://www.studyladder.com/). Students logged in and added the activity number in the search bar. This gave them further expose to a spelling sound partnership in an interactive way. They could read, hear and write to word and visuals provided a good context. Each exercise focuses on one spelling pattern. As they were achievable and learning was gamified, students were happy to do the exercises and seek out more by themselves in order to improve their scores. I recommend Linda adding this extra stage to her exercises either through Study Ladder, Spelling City or Quizlet. I appreciate that during her data collection stage in 2012 she did not have the time to do this. I found that by following up her worksheets at regular intervals with related short stories, and vocabulary games that students had the added encounters necessary to recognize and learn the patterns.

My final activity before the spelling test was to get students to trace around letters to spell out the words. To make the worksheets I used Spelling City https://www.spellingcity.com/view-spelling-list.html?listId=44562938

or A to Z Teachers Stuff [http://tools.atozteacherstuff.com/printable-handwriting-practice-workshee](http://tools.atozteacherstuff.com/printable-handwriting-practice-worksheet)t .

This provided the haptic memory which facilitates spelling. Air writing was also used sometimes to achieve the same goal.

Students recognizing that English is governed by spelling patterns and that if one way of encoding the long a sound does not work, they should try an alternative.

The worksheets encouraged students to see lists of words created by adding consonants before and after a central vowel sound encoded on paper through the use of a letter combination. I could hear them asking in Arabic 'what's the pronunciation pattern' 'namat alnnataq'. They were able to add words from their vocabulary lists to each pattern. (See the words highlighted in yellow on the long e worksheet. During their writing classes or in spelling tests there was evidence of students writing a word with one pattern and then changing it to another one. Students went through a 'scientific experimentation stage' in much the same way as emergent writers do it their first languages. They did not randomly rewrite words – they thought of the patterns available to them and then rewrote a word. As previously mentioned, they subvocalized, thought about the position of their lips and made data driven calculations on possible word spellings. This awareness extended to homophones not on our spelling lists such as there and their and in this way the worksheets were very valuable at the general consciousness raising level. I believe the worksheets also helped students to 'notice' patterns when reading their graded readers. The graded readers were written in natural English and did not have the pattern focus that the Study Ladder mini books had. However, the controlled form focused exercises involved in Linda's worksheets, coupled with weekly Study Ladder reading slots, empowered students to notice patterns when reading. I frequently asked students to read to me and noticed that by week 6 onwards the students' ability to decode when reading was enhanced in regards to the target patterns we had worked on. This was evident in the amount of self-correcting they did whilst reading aloud, especially in relation to 'bossy e'. Initially students enunciated each letter as they would in Arabic with final e being pronounced in the same manner as short sound e as in egg. For example, 'Amazon Race' was mispronounced /race/ 4

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letters. This altered to race following several recaps on the role of silent e in lengthening the previous vowel sound in the same way as the 2 symbols do about the A in Arabic.

Worksheets not done because they were beyond the scope of the students.

At the A1 A2 level, students mainly focus on the most common 100 grammar words of English, verbs and simple, short nouns. I therefore did not attempt to modify the later worksheets which focused on consonant clusters, digraphs and suffixes. As you can see, the majority of words in these sheets are composed of higher level lexis.

Sign in to save this text and share it with your students.

Words in the text by CEFR Level

Sort A1: 6% Sort A2: 6% Sort B1: 39% Sort B2: 11% Sort C1: 0% Sort C2: 0%

[1] famous [1] dangerous [1] curious   [1] religious
                            [1] delicious   [1] ridiculous
                            [1] enormous
                            [1] generous
                            [1] jealous
                            [1] nervous
                            [1] serious

Sort Off List Words: 39%

[1] ambitious
[1] cautious
[1] courageous
[1] furious
[1] gorgeous
[1] precautious
[1] precious

Conclusion

In conclusion, I have no doubt that the worksheets designed by Linda Graham are very successful in raising awareness that English is not a phonetic language and that there is not a one on one relationship between the pronunciation of a word and the letters used to encode specific sounds. Students became aware that there were short and long vowel sounds and that long vowel sounds could be transcribed in a reliable way once one learned the letters used to make these sounds. They became aware of homophones and started to look for patterns whilst reading (decoding) and writing (encoding). The exercises limited their choices when they experimented whilst writing a word out. They put the 4 possible patterns in the margin of the pages and then tried the word out using each pattern. They drew upon subconscious acquisition to decide which word looked most suitable. Students also became aware that the vowel sounds a e I o u – were generated by having your mouth wide for the a sound and closed and puckered for the u sound. Linda's worksheets followed this progression.

Appendix 51

Lesson plan – Worksheet 1

Objective	Activity	Resources
By the end of the warm up session students will have more familiarity with short vowel sounds. Also recognise the short vowel sounds they tend to get confused.

Students will also be aware of what I call red words – words that do not correspond with common grapheme/phoneme patterns such as 'put' – example used in this activity. | Warm up – write three letter words to practise short vowel sounds on white board leaving out vowel- cut – cot – cat – pit – pot – pat – pet – put (last word - specifically to introduce red words – words that do not correspond with common grapheme/phoneme patterns). Students to use flash cards once I say the word – bit of fun as a warm up exercise. | Flash cards – white board |
| By the end of the lesson students will be aware of the grapheme/phoneme correspondences relating to ay; a-e; ai; eigh; a.

Students will be able to break down words used into syllables.

Students will recognise some words that sound the same, but have different spellings/meanings.

Students will be familiar with | Activity 1. Following warm up put worksheet 1 up on smart board. Mention five words with grapheme/phoneme correspondences - examples such as - day – made – wait – eight – cable. Students write the words in spaces provided on worksheet and then transfer words to correct columns.
Activity 2. Encourage students to think of other words that would go under the graphemes and once it | Smart board – slide of Worksheet 1 with no words in columns under heading ay; a-e; ai; eigh; a.
Hard copies of Worksheet 1 for students. |

more words that do not follow common grapheme/phoneme correspondences.	is determined which is the correct column put on slide and students do the same on their hard copy. (Group activity) Activity 3. Students identify words from columns that sound the same, but have different meanings and write them in the spaces provided on the worksheet. Words are ate – eight; wait – weight. Activity 3. Bring attention to syllables and students write how many they hear in columns provided. Activity 4. Introduce another inconsistency in grapheme/phoneme correspondence – would – could – should - shoulder	