CHAPTER 1: INTRODUCTION

1.1 Introduction

The year 2011 marked the beginning of a new primary school standard curriculum known as *Kurikulum Standard Sekolah Rendah* (KSSR). It is in compliance with the implementation of the new policy 'Upholding *Bahasa Malaysia*, Strengthening English Language' or its Malay acronym 'MBMMBI' to address the national issues of poor English proficiency among Malaysians (Ministry of Education, 2010). Looking at the part of the English Language Learning and Teaching (ELLT) in this curriculum, the teaching of phonics was also given the much needed attention. According to the curriculum, 'the Years 1 and 2 learning standards address basic literacy using the strategies of phonics to develop phonemic awareness in pupils to enable them to become independent readers by the end of Year 2' (KSSR English Curriculum Specifications, 2010). Specifically, the question no longer lingers on the need to integrate phonics but rather on the most effective phonics instructions to impart as early literacy skills among young learners.

Phonics is a goal to enable learners to associate sounds to the prints and subsequently to transfer this skill into reading or spelling (Cordts, 1965, as cited in Emans, 1973; Lamb, 1975; Griffith & Olson, 1992). Current literature demonstrates that educators and researchers are still divided on the best phonics practices to develop early reading. The two opposing camps in the implementation of phonics practices are (i) the whole-language approach and (ii) the phonics approach (Bergeron, 1990; McKenna et al, 1990; Baumann et al, 1998; Rayner et al, 2001). The whole-language approach stresses on a meaningful and contextual input in which the integration of phonics instructions are secondary to purposeful, functional and real oral and written language experiences (McKenna, Robinson & Miller, 1990). On the other hand, the phonics approach believes that reading is a two-step process; (i) decoding and (ii)

comprehension (Richardson, 1997). Children need to first acquire the decoding skills in their beginning reading before they are to progress to the task of comprehension (Samuels, 2006).

Central to the discussion of phonics are the respective proponents of analytical phonics (AP) and synthetic phonics (SP). According to Johnston and Watson (2005), analytical phonics begins teaching with whole-word, and subsequently moves to raising phonemic awareness. This approach follows the principle in the top-down processing of reading which focuses on an individual's prior knowledge and expectations (Smith, 1971, 1982; Treiman, 2001). In contrast, synthetic phonics begins with individual sounds, it teaches grapheme-phonemes correspondences and then blends the sounds for reading purposes. It shares the principles in the bottom-up processing of reading which view the ability to decode efficiently and to recognise words automatically as vital skills.

In this study, early literacy is defined in relation to skills-based, whereby children's performance in listening, speaking, reading, and writing are measurable for documentation purpose (Purewal, 2008). The present study focuses on reading fluency and writing (in the form of spelling ability). Reading is defined as a two-process skill; the automatic word recognition skills and, the ability to tap into prior knowledge and experience to gain comprehension (LaBerge & Samuel, 1974; Gough & Tunmer, 1986; Richardson, 1997; Rose, 2006). The fundamental step in achieving word recognition is decoding, whereby a child is able to associate the sounds (phonemes) represented by a letter or a combination of letters (graphemes), and to identify the complete word (LaBerge & Samuel, 1974; Gough & Tunmer, 1986; Richardson, 1997; Rose, 2006). For example, recognising the sounds of /buh/ei/tuh/ (/b/ei/t/) in 'bait' will enable them to produce the word 'bait'.

According to Rose (2006), synthetic phonics emphasises on these steps to help learners to acquire automatic decoding skills and thus paves the way for word recognition. The present study advocates taking the synthetic phonics approach. It further incorporates systematic phonics into the synthetic phonics training, following the strong recommendation of the American National Reading Panel (NRP, 2000). This study looks at two types of phonics training conducted with a group of indigenous children (*Iban*) residing in the rural parts of Sarawak. These children are at risk of losing out behind their city peers in early literacy if their ability to read in the English Language is not addressed in time (UNICEF, 2008).

1.2 Background

As an English Language teacher posted to the interior area of Sarawak in 2009, it has been observed that these indigenous children of the native tribe (*Iban*) faced difficulty in grasping the basic English Language skills. In my three years of observation and interaction in their language-learning journey, the children's poor literacy rate (referred herein particular to reading and spelling) has resulted in their inability to fully immerse themselves in the mainstream English Language lessons. The said mainstream English Language indicates the curriculum specifications, syllabus and materials prepared by the Malaysian Ministry of Education (MOE). The execution of the recommended phonics training as stipulated in the standard document (an official document containing learning objectives, learning contents and learning standards) to address this urban-rural gap among the Level-One children (Primary 1 and 2) in the years 2011 and 2012 has yet to yield the expected reading fluency.

"The Year 1 and 2 learning standards for reading addresses basic literacy using the strategies of phonics and moves on to enable pupils to become independent readers. In the beginning, pupils' phonemic awareness will be developed by means of phonics. This ability to recognise letter sounds is an essential and useful early reading skill. This ability is further developed by blending individual sounds to build words."

(KSSR Years 1 & 2 Standard Document, 2011)

My experiences and personal interest in the indigenous children's development of early literacy in a the English Language (EL) has guided my search for the best approach to impart the decoding skills to children, so as to lay a strong foundation for them in the beginning reading process. I conducted a three-week experiment integrating systematic synthetic phonics upon coming across several literatures, and the experiment yielded positive outcomes. My pupils' reading and spelling ability improved tremendously. According to a news report published by BERNAMA (2012), similar projects using synthetic phonics (Jolly Phonics) to teach reading have also been carried out by a *Universiti Malaysia Sabah* (UMS) team to the children of the *Ubian* community in Pulau Mantannani, Sabah (Appendix A). In a personal interview with Dr Lee, the head of the team, he confirmed that no empirical evidence were recorded as the project had been intended to be an outreach programme to the university students. It then occurred to me that a carefully designed study might help extend this knowledge on the advantages of SSP to a larger community, and benefit the rural children in the long run.

The remainder part of this chapter presents the problem statement for this study. It is followed by the purpose of the study, hypothesis and research questions and, significance of the study. This chapter ends with a brief definition of key terms.

1.3 Problem Statement

According to the statistics in the fact sheet entitled '*Education is a Human Right. Literacy and Education in Malaysia: Key Actions*' released by UNICEF (2008), literacy rate among the Malaysian population aged 10 years and above attending or had attended school was 91%. The report provided further information in a subsection termed 'Current Gaps', listing several persisting challenges of improving literacy in Malaysia. Among the challenges mentioned are the urban-rural disparities and, the indigenous (aborigines) children. Under the urban-rural disparities, the sheet stated that literacy rates for the rural areas of Sabah and Sarawak stand at 79% and 72% respectively. These literacy rates were significantly lower in comparison with other parts of Malaysia. Secondly, under the native children, the sheet showed an even lower literacy rate of 51% among the indigenous communities.

In the year 2010, the Malaysian Government announced an initiative to improve literacy among young schoolchildren. The initiative involves the implementation of phonics for beginning reading. In response to the move by the government, Johnson and Tweedie (2010) conducted an 'early literacy project' to study the possibility of having the phonemic awareness instruction implemented. In their report 'The Early Literacy Project in Malaysia (2010)', they expressed doubts and opined that the objectives drafted by the Malaysian government are overly ambitious for rural parts of Malaysia where English is learned as a foreign language.

In the year 2011, it was also found that the phonics training administered by the national trainers from English Language Teaching Centre of Kuala Lumpur (ELTC) do not complement the KSSR phonics components recommended and implemented within Malaysian schools. The weeklong training occurred in May 2011, inviting 26 primary-school English teachers in the Bintulu district. The ELTC trainers incorporated both the synthetic and analytical phonics as part of the teaching process and distributed materials that followed the model presented in the Scholastic (American English) phonics program (Appendix B). This is inconsistent with the KSSR phonics training as teachers in Malaysia were directed to use 'Standard British English as a reference for spelling and grammar as well as pronunciation for standardisation' (Standard Document, 2010).

In the year 2013, it was found that the rural children in Bintulu, Sarawak continued to grapple with word recognition and decoding ability despite the implementation of the synthetic phonics system. This situation is evident in thirty Primary 3 children from three neighbouring rural schools, who were considered as the

pioneers of the KSSR phonics. Three years after the KSSR phonics training, it was observed that there was no continuation in using the KSSR phonics for both teachers and children. Although the thirty Primary 3 children have undergone two years of phonics training for reading, they have not been engaging the phonics strategy. Thus they remain erroneous and non-fluent in their reading and spelling. This conclusion was made based on their performance in the School-Based Assessments (SBA) on reading and spelling. A survey of this problem of no continuation was conducted on thirty inservice KSSR English teachers in Bintulu and 87% of them acknowledged the issue of no continuation (Appendix C).

While evidence of low literacy rates have been established in the rural areas of Sarawak, no such literacy rates have been investigated within the national schools of Bintulu, Sarawak. Despite the doubts expressed by Johnson and Tweedie (2010) and the inconsistency in the master training of phonics, there is inadequate knowledge of the impact of synthetic phonics on early literacy. Presently, the rural children's poor literacy rate (defined as reading and spelling) remains a barrier for them to enter the mainstream English Language classes.

1.4 Purpose of the Study

Current studies have shown systematic and synthetic phonics to be beneficial for children who are in their beginning stage of learning reading (Ehri, Nunes, Stahl & Willows, 2001; de Graaff, Bosman, Hasselman & Verhoeven, 2009; Johnston, McGeown & Watson, 2011). Essentially, reading consists of two components, the word recognition and, language comprehension processes. Acquiring the decoding skills in beginning reading enhances children subsequent reading venture. The phonics method corresponds well to this notion with its set of linguistic rules such as the grapheme-phoneme correspondences and blending that help children in decoding words (Coltheart, 2005; Rose, 2006).

The results of the participants' school-based reading and spelling assessments show that participants in this study were struggling with their early literacy. As such, it is important to provide effective reading instructions that will help develop their reading skills. The underlying assumption in this present study is that the phonics strategy would boost their confidence and increase their interest in reading and spelling. As noted by Ehri (1997), studies have shown that reading words and spelling words are highly correlated, with *r*s commonly above .70, indicating that both involve the same processes. Against this background, the purpose of this study is to investigate the effectiveness of the systematic synthetic phonics in improving reading fluency and spelling ability of thirty-two eight-year-old children of the indigenous tribe of *Iban*. They were sourced from three neighbouring schools situated in the interior parts of Bintulu, Sarawak. Consent was obtained from the children's parents, relevant school authorities and the state education office (Appendix D).

1.5 Research Questions and Hypothesis

This study investigates the effects of different phonics training on reading fluency and the spelling ability of second language (L2) learners. The research questions and the hypothesis are as follows:

Research Questions:

- What is the relative effect of systematic synthetic phonics as compared to the KSSR phonics on children's early reading fluency and spelling ability? *Hypothesis*: The indigenous children who undergo systematic synthetic phonics will attain higher levels of reading fluency and spelling ability than the children who received KSSR phonics only.
- 2. If there is an effect of type of phonics training on children's early reading fluency and spelling ability, are children able to retain the acquired reading fluency and spelling ability?

1.6 Significance of Study

This study is significant because it examined the efficacy of the phonics method of teaching literacy that may considerably improve young indigenous children's reading and spelling ability. The significance are classified into three aspects; (i) it fills a literature gap – no study has looked at the L2 learners at their beginning stage of learning reading in Bintulu, (ii) provide evidence to indicate that phonics improves reading and spelling, (iii) evidence to illustrate the need for a systematic synthetic phonics course and syllabus to be introduced in rural schools.

Firstly, there is a scarcity of literature pertaining to systematic synthetic phonics for second language (L2) learners. While there are several studies that explored the potential of the phonics strategy in L2 developmental reading (Verhoeven, 1990; Ip, 2004; Purewal, 2008; de Graaff et al, 2009; Sze, 2009), no empirical studies (to the author's knowledge) have been carried out to examine the impact of SSP instructions with local rural community. For instance, Lee (2012) claims that a literacy project involving children of the *Ubian* community in Sabah has remarkably improved the children's reading fluency. The project was conducted as part of a university lecturer's outreach program. It employed a systematic phonics program for reading. This study hence will provide further evidence to substantiate the lecturer's claim that systematic phonics indeed promotes early literacy among children from disadvantaged backgrounds. In brief, my study contributes to the existing phonics literature by focusing on phonics for L2 learners. The findings may further confirm the effectiveness of SSP, in enhancing reading and spelling for learners the English Language or L2 learners.

Secondly, the Ministry of Education (MOE) in the year 2010, announced that Malaysian public schools are gearing towards learner-centeredness and using phonics as a strategy for teaching reading (KSSR English Curriculum Specifications, 2010). This study therefore fits in with the national objective of enhancing children's reading as it provides children with a "self-learning device" in which they can make use of the phonics strategy of sounding and blending in order to decode unfamiliar words. Decoding is a key component in the acquisition of early literacy skills (Juel, 1988). Notably, young children will struggle and altogether dislike reading should they fail to comprehend and acquire the concept of decoding. They are most likely to be struggling with reading down the road (Juel, 1988; Morris, Shaw & Perney, 1990 in Linan-Thompson et al, 2003), if their ability to read and spell is not facilitated any further.

Teachers of the English Language may find this study useful in developing their children's literacy, particularly those from the indigenous community of rural areas. Finally, the findings of this study will serve to inform the general public about the need for a systematic phonics instruction course and syllabus, which when adequately applied, can enhance learning and reading among L2 learners, particularly those who have less exposure to it.

1.7 Definition of Key Terms

The various terms directly related to this study are briefly defined, according to alphabetical order. These terms are used throughout the study. More elaborated definitions are presented in the subsequent chapters, wherever appropriate. The elaborated terms are used in context, and therefore provide a more comprehensive understanding.

Alphabetic. The letters of the alphabet represent speech sounds and could be produced orally (Bateman & Wetherell, 1964).

Analytic Phonics. Begins teaching using the whole word, and then introduces the sounds and patterns involved in the spelling system (Johnston & Watson, 2005).

Blending. The process of putting individual phonemes together to form and read a complete word (Griffith & Olson, 1992).

Decode. To analyse spoken or graphic symbols of familiar language to ascertain their intended meaning. The term is used primarily to refer to word identification rather than to identification of higher units of meaning (Harris & Hodges, 1995).

Early Literacy. Referred to as 'skills-based' literacy, and is related to the measurement of the learners' ability to read, write, listen, or speak effectively without specific consideration to learners' previous social and cultural influences (Purewal, 2008).

Grapheme. A letter or a combination of letters that represents a single phoneme (Coltheart, 2005).

Grapheme-Phoneme Correspondences (GPCs). The relationship between the letters (grapheme) and their sounds (phonemes); and the practice of connecting them to develop the automatic letter-sound association (Bloomfield, 1926, in Meier, 2012).

Irregular Words. Words that do not take their regular values, and cannot be phonetically decoded (Bateman & Wetherell, 1964).

Jolly Phonics. A systematic synthetic phonics programme that strongly emphasises on the discrete teaching of phonemes and graphemes in the early stage to ensure the acquisition of GPCs (Wyse & Styles, 2007).

KSSR Phonics. The current phonics strategy stipulated in the Malaysian education document, and practised by educators nationwide (MOE, 2010).

Phoneme. The smallest single identifiable sound (Gagen, 2007).

Phonemic awareness. The understanding that the individual sounds of spoken language work together to make words (Griffith & Olson, 1992).

Phonemic Code. The building blocks of written English, in which the complete phonemic code is the specific grapheme-phoneme correspondence that consists of approximately 44 phonemes and 26 graphemes (Gagen, 2007).

Phonetic Words. A misnomer for a phonically regular word whose pronunciation may be accurately predicted from its spelling (Harris & Hodges, 1995).

Phonics. A goal to enable learners to associate the sounds to the prints and subsequently transfer this skill into reading or spelling (Cordts, 1965, in Emans, 1973; Lamb, 1975; Griffith & Olson, 1992).

Phonics Instruction. Teaching practices that are designed to help pupils acquire knowledge of the relationships between letters and sounds, and the ability to blend combinations of letter-sounds to form a complete word (Armbruster et al., 2001).

Phonics Knowledge. The knowledge of letter- sound relationships and the ability to blend the sounds represented by letters (Gagen, 2007).

Pseudowords. A pronounceable combination of graphemes that do not make a real word (non-words) but do have all the characteristics of a known real word. They are sometimes used in reading to test phonics knowledge and in spelling to test for desired syllabic patterns while avoiding known words (Harris & Hodges, 1995).

Reading. An act of rendering printed or written symbols into speeches and it is a two-step process in which decoding precedes comprehending (Richardson, 1997).

Reading fluency. The ability to read texts with speed, accuracy and expression (National Reading Panel, 2000).

Regular Words. Words that can be phonetically decoded or take their regular values, or the sounds (Bateman & Wetherell, 1964).

Segmenting. The process of identifying the individual phonemes in a word, taking them apart and, representing them with graphemes to spell (Griffith & Olson, 1992).

Synthetic Phonics. Teaches learners the identification of individual sounds that are represented by a letter or a combination of letters in a word, before putting them together to form the complete word (Stahl, 1998; de Graaff et al., 2009).

Systematic Phonics. 'Systematic' contains two important connotations; scope and sequence. Scope includes the content of the phonics instruction, the range of grapheme-phoneme correspondences covered. Sequence defines an order for teaching letter-sound relationships (Mesmer & Griffith, 2005).

Systematic Synthetic Phonics. Systematic phonics instruction that engages the synthetic phonics approach.

1.8 Summary

This chapter has presented an introduction and background to the present study. The shift in the Malaysian government's educational policy has seen a national interest in improving English literacy among young schoolchildren. The implementation of phonics for beginning reading, the low literacy rates among rural children as presented by UNICEF (2008) and, the researcher's personal experience with the rural children's difficulty in grasping the basic English Language skills have led to the purpose of this study. Although studies have shown that systematic synthetic phonics helps in early reading, still not enough is known about the impact on L2 learners, particularly rural indigenous children. The study thus looks into the effects of systematic synthetic phonics on children's reading fluency and spelling ability. The study also aims to contribute to the existing literature pertaining to systematic phonics and, to inform the teachers and general public about the need for a systematic phonics instruction course and syllabus.

Organisation of Remaining Chapters

Chapter 2 presents a review of literature, divided into three sections; the historical background, theory relevant to hypothesis and current empirical literature pertaining phonics and SSP. In 'Historical Background', this study traces the history and development of phonics. It presents the competing views of the proponents of the

two major camps of reading; the Whole-Language and the Phonics approach. In the phonics approach itself; studies are divided between the advocators of synthetic phonics and analytical phonics. The notion of SSP is further described and explained in 'Systematic Synthetic Phonics', and 'SSP and L2 Learners'. The theoretical foundation of the phonics method follows, with the inclusion of major Second Language Acquisition (SLA) theories and various models of reading. This chapter ends with current empirical literatures that are relevant to the hypotheses and the research questions of this study. Chapter 3 describes the participants, measure and instruments, validity and reliability of instruments, research design, procedure of both the SSP and KSSR phonics training and, data analysis in detail. Chapter 4 reports the results of the post-tests, and answers to this study's hypotheses and research questions. Chapter 5 provides a discussion, a summary of the results, interpretation of the findings, the implications and applications to ESL/ L2 learners, limitations and finally, suggestions for future research.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

The purpose of this study is to investigate the effectiveness of systematic synthetic phonics in improving the early literacy of second language (L2) learners. This chapter discusses the historical context, theories and models of reading underpinning phonics. It begins by looking at the conforming and contrasting views of various literatures in phonics. Next, as this present study is concerned with early L2 literacy, this chapter encompasses theories of Second Language Acquisition and the various models of reading. The theories and models of reading composed the theoretical framework that guided the present study. Finally, the literature will discuss the critique and support for systematic synthetic phonics. This chapter is organised into five main sections: (i) The History and Development of Phonics, (ii) Competing views in Early Reading Acquisition, (iii) Theories of Second Language Acquisition, (iv) Models of Reading and, (v) Relevant Studies.

2.2 The History and Development of Phonics

2.2.1 Bloomfield's Linguistic System

One of the notions in Bloomfield's theory that is directly associated to phonics is phoneme (Meier, 2012). Phonemes constitute a member of the field of phonology which falls within the larger field of linguistics. For Bloomfield (1926, cited in Meier, 2012), phoneme is a distinctive sound and every form in language is made up wholly of phonemes. Bloomfield's linguistic approach to teaching reading is based on two important concepts – English writing is alphabetic, and reading is an act of responding vocally to the prints (Bateman & Wetherell, 1964). He elaborated that the letters of the alphabet represent speech sounds and these could be produced orally. Thus, reading the words is achieved by making the sounds of the letters.

Bloomfield (1926) divided English words into "regular" and "irregular", as not all words in English can be phonetically decoded. Those that are decodable or take their regular values are categorised as "regular", while the rest are irregular. This is an important distinction as Bloomfield states that the teaching of beginning reading should include only "regular" words first. This should continue until a child has overlearned and achieve the "automaticity". In Bloomfield's (1926) linguistic system, a child must learn the alphabet, acquire the ability to name all the letters and, master the left-to-right order of decoding words thoroughly. Bloomfield's system also concentrates heavily on connecting the letters to their sounds so that children can develop the automatic lettersound association.

This emphasis on automaticity is in contrast to the phonics method that is based on the reasoned association between letters and sounds. Bloomfield's system only considers the first process of converting letters to sounds as reading. He argued that parties who disagree with him are confusing the mechanics of learning to read with its goal (comprehension). However, Bateman and Wetherell (1964) criticised Bloomfield's system. They objected the notions of: (i) the dependence on an "automatic" rather than reasoned association between letters and sounds; (ii) the exclusive use of the name, rather than the sound of the letters; (iii) too rigid exclusion of all irregularly spelled words during early instruction and; (iv) inadequate attention to instructional problems should a child have difficulty.

2.2.2 Linguists and Phonics

Early debates in teaching beginning reading had alternated between phonics and whole-language approach (Emans, 1968). Despite Bloomfield's (1926) argument against phonics, phonics began receiving revived attention in 1955 in the United States. It was propelled by Rudolph Flesch's (1955) book '*Why Johnny Can't Read and What We Can Do About It*' which addressed the nation's decline in literacy in its own

language (Emans, 1968). The book critiqued the whole language approach and put forward phonics for reading. It consequentially influenced the flurry of research studies on phonics (Hall, 1956; Emans, 1968; Reyhner, 2008).

Flesch (1955) had based his book on Bloomfield's linguistic system to teaching reading among language learners. According to Barnhart (1961), a child practises reading by relating the sounds in a word to their print forms. This claim was substantiated in Flesch's second and third chapters, in which he proposed that there is a relationship between sounds and letters. Thus, he introduced two important concepts that are widely used in today's phonics, grapheme and phoneme (Hall, 1956). Although phonics is used to teach reading from the linguistic perspective, it is not a teaching method as perceived in the educational fields. Rather, phonics is a goal to enable learners to associate the sounds to the prints and subsequently to transfer this skill onto reading or spelling (Cordts, 1965, as cited in Emans, 1973; Lamb, 1975; Griffith & Olson, 1992). Phonics is also the umbrella term which constitutes an organised set of rules about vowels, consonant-blends and syllables. The key of which is to recover the sounds from the prints.

Wardhaugh (1971) looked at phonics as a language-centered type of instruction in the teaching of beginning reading. He stated that a child's interest in reading could only be fulfilled if he or she possesses the ability to decipher the prints on the papers. In the process of learning how to read, children need to be made aware that those prints on the paper invented by human beings actually represent sounds. Consequently, the purpose of phonic instruction is to enable children to associate the printed lettersymbols with known speech sounds (Heilman, 1968, cited in Emans, 1973). Children learn a system that is new to them – the writing system, and links it to their already known linguistic system, and thus learn to convert the prints in books into meaningful arrangements of sounds which they hear around them. Simply put, the task in phonics is to systematically relate the two systems – writing and speech sounds (Wardhaugh, 1971).

Nonetheless, there are several misconceptions with regards to phonics. Wardhaugh pointed out that regardless of the types of phonics approach was used, there is a need to differentiate between; (i) phonics instruction, a teaching beginning reading instruction; (ii) phonetics, the study of speech production and; (iii) phonemics, the study of how sounds function to convey meaning differences.

2.2.3 Phonemic Awareness and Phonics Instruction

According to Cunningham (1988, as cited in Griffith & Olson, 1992), phonemic awareness is the understanding that the sounds of a spoken language work together to make words. Phonics is concerned with letter-sound correspondences and thus, it essentially differs from phonemic awareness. Phonemic awareness does not sound out words, but its skill enables children to use the letter-sound relationships to read and spell words by understanding the structure of the spoken language (Griffith & Olson, 1992). For successful teaching of reading through phonics, it is necessary to develop learners' phonemic awareness.

Ukrainetz, Cooney, Dyer, Kysar and Harris (2000) proposed that the type of phonemic awareness that is considered critical for reading and writing is awareness of phonemes (smallest single identifiable sound) or speech sounds. Thus, it is important to be careful in choosing the type of phonics instructions. Armbruster, Lehr and Osborn (2001) defined phonics instructions as: (i) teaching practices that are designed to help pupils acquire knowledge of the relationships between letters and sounds and, (ii) the ability to blend combinations of letter-sounds (blending). Blending is the process of putting individual sounds together to read a complete word (Griffith & Olson, 1992). Blending requires phonemic awareness. Current programs have yet to fully attend to or incorporate explicit instructions on how to blend (Beck, 2006; as cited in Murray et al.,

2008). Beck (2006) recommended scaffolding blending. He suggested that a sequential process be developed where learners will first sound each letter, remember the sequence and then blend the segments (put together the individual sounds). This scaffolding blending process is integrated in the present study as part of the systematic synthetic phonics approach.

2.2.4 Analytical Phonics and Synthetic Phonics

The teaching of phonics encompassed two different approaches; (i) analytical phonics and (ii) synthetic phonics (Johnston & Watson, 2005). Analytical phonics abides by the principles of the top-down processing in reading, whereas synthetic phonics follows the bottom-up model.

Gray's (1948) paradigm was the earliest and most complete model in articulating the analytical phonics instructions (Manzo & Manzo, 1993:245). According to Gray's (1948) paradigm, analytical phonics begins teaching reading by firstly introducing the whole word to the learners. Learners are made aware of the sounds and patterns involved in the spelling system (Johnston & Watson, 2005). For example, children are introduced to these words 'pat, pen, pot, pencil, popsicle'. Then, they are told that the words all begin with the letter 'p' and the letter 'p' carries the sound 'p-uh'. Analytical phonics thus follows the top-down processing approach. This model of reading focuses on a learner's prior knowledge and language experiences. Top-down processing in reading is discussed in detail in a later section of this chapter.

According to Manzo and Manzo (1993) and Stahl (1998), early synthetic phonics was clearly represented by Orton-Gillingham methods (Orton & Gillingham, 1937), in their step-by-step approach to teach children with severe reading disability or who are dyslexics. Synthetic phonics teaches learners the identification of individual sounds that are represented by a letter or a combination of letters in a word, before putting them together (phonics term: blending) to form the complete word (Stahl, 1998;

de Graaff, Bosman, Hasselman & Verhoeven, 2009). De Graaff et al. (2009) posited that once these basic grapheme-phoneme correspondences are grasped, most words in the English language can be decoded without difficulty, and this expands children's reading vocabulary. Synthetic phonics entered the main stream of teaching in the beginning of the 20th century with exercises that oversaw children learning the letter sounds, letter names and blending (Pearson, 2000).

2.2.5 Systematic Synthetic Phonics

In the year 2000, the National Reading Panel (NRP) of the United States of America released a 449-page report which reviewed more than 100000 research studies on reading. The panel's findings showed that both phonemic awareness training and systematic phonics instruction exerted significant impacts on children's reading and spelling development. More importantly too, at the end of the training, the children had retained their reading and spelling ability. The NRP subsequently advocated for systematic phonics instruction for reading (National Institute of Child Health and Human Development [NICHD], 2000).

The NRP's recommendation has made an impact in the international educational policies. In 2005, the Scottish government studied the performance of the analytical phonics program in comparison to the synthetic phonics program (Johnston & Watson, 2005). Their study confirmed the effectiveness of synthetic phonics in developing early literacy skills. In the same year too, the Australian government became a proponent of the systematic phonics instruction to teaching reading after an enquiry was made into their educational system (Australian Government, Department of Education Science and Training, 2005). In England, the government recommended that systematic phonics approach be used for the teaching of early reading based on the evidence in Rose Report (2006, cited in Wyse & Goswami, 2008).

According to Mesmer and Griffith (2005), the NRP (2000) report also popularised the term 'systematic phonics instruction'. In their pursuit to understand the term 'systematic phonics instruction' better, Mesmer and Griffith (2005) traced the history of the term. They noted that Adams (1990) first used the term 'explicit, systematic' in her recommendations for phonics instructions for studies she reviewed. Early studies on phonics (before the 1990s) had used 'explicit' and 'systematic' separately. Mesmer and Griffith (2005) further explained that explicit and systematic phonics encompasses three common elements. They are; (i) a curriculum with a specific, sequential set of phonics elements, (ii) instruction that is direct, precise and unambiguous and, (iii) practice using phonics to read words.

Mesmer and Griffith (2005) stated that the term 'systematic' contains two important connotations; scope and sequence. 'Scope' includes the content of the phonics instruction, the range of grapheme-phoneme correspondences covered. 'Sequence' defines an order for teaching letter-sound relationships. Therefore, it is important that systematic phonics training follows a planned scope and sequence. The principle is systematic phonics presented by Mesmer and Griffith is applied in the present study. Next, 'explicit' refers to the mode of delivery in which instructions are given directly to children. For example, children are told that the sound of 'ai' as in 'bait' is /eɪ/.

Synthetic phonics adapts the explicit phonics approach (Griffith & Olson, 1992). Therefore, the term 'Systematic Synthetic Phonics' in this study is derived from 'explicit, systematic phonics instruction' by substituting 'explicit' with 'synthetic'. To encapsulate, the systematic synthetic phonics training in this study follows a strict hierarchy of procedures; (i) it begins with letter-sound relationships, (ii) it is followed by blending multiple sounds into words, (iii) combining words into sentences and finally, (iv) text comprehension (Jolly Phonics, 2012).

The following section presents competing views in early reading acquisition. The discussions touch on the strengths and weaknesses of each view, and how they are related to the present study.

2.3 Competing Views in Early Reading Acquisition

Richardson (1997) defined reading as an act of transferring printed or written symbols into speeches and he suggested that reading is a two-step process; (i) decoding and (ii) comprehending. Decoding occurs when a reader recovers sounds from the printed symbols, and comprehension occurs when a reader comprehends through his or her knowledge, vocabulary and language sophistication. Richardson's two-step process in reading is supported by Gough and Tunmer's (1986) 'simple view' on reading. Gough and Tunmer (1986) recommended that a clear distinction be made between word recognition processes and language comprehension processes.

Making the differentiation is important because in reading, a reader's attention is focused on decoding. Therefore, language comprehension cannot occur simultaneously. For beginner readers, their ability is limited to doing one task at a time, which is to decode, before they can move to the task of comprehension (Samuels, 2006). Phonics applies the principles in the 'simple view on reading' and develops the learner's decoding ability first, in order to achieve word recognition.

2.3.1 Phonics versus Whole-Language Approach

In the year 1931, the American educational authorities made a big switch from phonics (a two-step reading process) to make reading a one-step process by installing the 'Dick and Jane' sight-word reading series. Phonics was phased out to make way for the 'whole-word, sight-word, look-say' approach, said to be meaning-emphasis and comprehension oriented as opposed to phonics that was mere word-sounding without comprehension (Richardson, 1997). However, educationists and linguists continued to debate on the better approach for teaching beginning reading. In 1965, the reading wars began to heat up and two factions of reading emerged (Samuels, 2006). One was a proponent of the Comprehension Hypothesis (whole-language) and another argued for the Skill-Building Hypothesis (phonics way).

Comprehension Hypothesis states that the whole-language approach is more conducive because children's beginning reading practices are meaningful and purposeful. Goodman (1967) and Smith (2004) argued against phonics and the artificial texts used in basal readers (texts with controlled and decodable words). This is because Goodman and Smith agreed that children could learn to read naturally, like how they learned to speak. Comprehension Hypothesis indicates that children learn to read by reading. Thus, reading tasks should focus on providing children with interesting and comprehensible texts (Goodman, 1982; Smith, 2004) because reading is seen as the source of vocabulary knowledge, phonics knowledge, writing style, grammatical competence and spelling (Krashen, 2002).

On the other hand, Skill-Building Hypothesis postulates that the development of early literacy should be bottom-up. A child first needs to learn to read by learning lettersound correspondences, practising and making corrections. The child then uses this ability to read larger texts as the letter-sound correspondences knowledge becomes automatic. In 1967, Chall's book '*Learning to Read: The Great Debate*' brought in renewed efforts for the teaching of phonics and for developing decoding skills (Samuels, 2006). LaBerge and Samuels (1974) model of automatic information processing in reading verified that reading is a bottom-up process. This implies that for beginning readers, the developmental sequence was from smaller to larger units of word recognition. This process places heavy demands on short-term memory, but when the same word is encountered repeatedly, the repetition helps to free the mind from attention to details (Huey, 1968 in Samuels, 2006). To conclude, the present study concurs with the Skill-Building Hypothesis that phonics instruction is the better approach to develop beginning reading among the second language (L2) learners. There are three primary reasons to substantiate this claim. Firstly, young L2 learners cannot learn to read by reading as their reading skills have yet to be developed. Secondly, whole-language instruction may not be applicable because of the learners' varying degrees of social economic status and poor language experiences. Thirdly, as suggested by Samuels (2006), it is important for beginner readers to learn to decode first because their ability is limited to one task at a time.

2.3.2 Analytical Phonics versus Synthetic Phonics

From the various approaches explained above, it appears that educators and authorities in reading, especially beginning reading methods, agree that having the knowledge of phonics is important for children to become independent readers. Chall (1967) did a comprehensive review of beginning reading instruction, covering studies from the 1950s up to the mid-1960s. Chall's review noted that early and systematic phonics instruction could produce better achievements in reading. Chall's (1967) initial review did not state which phonics method was more beneficial. In the 1983 review however, Chall proposed that synthetic phonics instruction could have an edge over the analytic phonics instruction. She reasoned that the letter-sound knowledge in synthetic phonics acquired by children first helped them to decode and read words. Studies by Bear (1959, 1964); Anderson, Hiebert, Wilkinson and Scott (1985); Adams (1990); Johnston and Watson (2005); Johnston, McGeown and Watson (2011) help to reinstate Chall's (1983) findings on the benefits of synthetic phonics.

An advocate of systematic synthetic phonics, Bear (1959, 1964), suggested that synthetic phonics is more effective than analytic phonics. He claimed that the effectiveness of synthetic phonics is due to the emphasis on blending individual sounds and the sequence of procedures which start from basics. In a synthetic phonics lesson, teacher begins by introducing the smallest word elements (the letter sounds) and children string these elements together to form larger units (words). Although there are various techniques in applying synthetic phonics, one thing is in common. The techniques all started with individual letter sounds before moving on to larger units.

Synthetic phonics programs are also systematic and sequential in nature. Children first learn about the relationships between graphemes and phonemes, then they learn to apply them to decode unfamiliar words. This is done by sounding out the individual letters and blending them. Children apply their decoding skills to construct the pronunciation of unfamiliar words instead of being told. Synthetic phonics thus presents learner-centeredness and a high degree of mastery in beginning reading. They do not begin with initial sight vocabulary, and all sounds are taught before the introduction to books (Feitelson, 1998 in Johnston & Watson, 2005). According to the English alphabet, the basic forty-four letter sounds may be learned in the space of a few months at the beginning of their first year in school. This enables them to read unfamiliar words without assistance from the teachers.

However, synthetic phonics in early reading programs places emphasis on the word structure to the neglect of important skills in comprehension. Synthetic phonics also has its weaknesses. It has been argued that the method overemphasised the mechanics of reading, and when taught in isolation, is devoid of meaning. The constant drill in reading mechanism reduces interest in reading and do not carry over into normal reading situations. Most of all, because English is an unphonetic language (not all words are phonetically decodable), children cannot decode words the phonics way. The usual word blending instruction also fails to carry over to pronunciation of polysyllabic words (Bear, 1959, 1964).

Unlike synthetic phonics in which children practise synthesising, analytical phonics require children to analyse a set of words given. The learning of letter sounds in

analytical method can only happen after reading has already begun. Words are initially learned by sight, in a meaningful text. In order to teach the letter sounds, analytical phonics begins by presenting a group of three to four sight words that begin (or end) alike. For example, children are given words like 'catch, cop, coop, cat' and they will be told to notice that the words begin in the same way. Children are then expected to make generalisations that help them identify this sound at the beginning of other words. Letter sounds are never learned in isolation from the word (Bear, 1959, 1964; Harris & Smith, 1976).

Analytical method requires teacher's full assistance as children draw information from the sounds and words produced orally by the teacher. When the entire set of 44 letter sounds in the English Language have been introduced this way, the learning of blending may be incorporated. In Scotland, it took children three terms of their first year at school to be aware of the importance of letter-sound correspondences in all positions of words. The full analytic phonics scheme is usually not completed until the end of the third year at school. The process of learning to read is thus time consuming, in comparison to the procedures in synthetic phonics.

The downside of the analytical phonics instruction is that it was implemented in a rote manner and was gradually phased out in the growing interest of learner-centered approach. Activities are deemed to be learner-centered when children are taught independences and assume a bigger role while the teacher facilitates their learning progress (Johnston & Watson, 2005). Piaget theorised that children are active learners who can construct knowledge for themselves, and ought to be encouraged for a more participative role in their path of learning (Johnston & Watson, 2005).

Although synthetic phonics shares its fair share of critiques, this present study maintains its position on the benefits of synthetic phonics as Malaysian schools had practiced the teaching of reading via sight words and HFWs. In addition, to date, most studies on phonics, synthetic phonics and explicit, systematic phonics instructions have been based on L1 (native speaker of the target language) learners. This is evident in the major reports by the four English-speaking nations; America, England, Scotland and Australia. There has yet to be sufficient literature pertaining second language reading acquisition that provides conclusive evidences if systematic synthetic phonics benefit L2 (second language) learners as well (Nutall, 1996; Birch, 2002; cited in Purewal, 2008).

As synthetic phonics provides learners with more learning independence, the present study seeks to investigate the effectiveness of synthetic phonics in developing early literacy. In addition, this study is in line with the current curriculum (KSSR). As per the objectives stipulated in the Standard Document (2011), the Malaysian Ministry of Education (MOE) encourages learner-centered activities so as to produce independent readers.

2.4 Theories of Second Language Acquisition

According to Larson-Freeman and Long (1991, p. 227), there are at least 40 theories of second language acquisition. These theories may be categorised into three broad perspectives; the nativist, the environmentalist (or the behaviourist) and, the interactionist.

2.4.1 The Nativist Theory

Noam Chomsky (1965), a linguist, developed a theory proposing that all human beings have the innate ability to acquire language as a result of the "hardwiring" in human brains. He termed this ability of the brain as the Language Acquisition Device, or LAD. Nativist theories draw largely from Chomsky's work, and hold that language acquisition is innately determined. The LAD allows a child to listen to a language, decipher the rules of that language and, begin creating words with the language at a very young age. Chomsky suggests that with the correct input, this manner of language acquisition can be applied to a second language (Escamilla & Grassi, 2005; Levey & Polirstok, 2011).

Stephen Krashen (1981) applied Chomsky's theory to the process of second language acquisition and developed the Monitor Theory. The Monitor Theory consists of five interrelated hypotheses; (i) the Acquisition-Learning Hypothesis, (ii) the Natural Order Hypothesis, (iii) the Monitor Hypothesis, (iv) the Input Hypothesis and, (v) the Affective Filter Hypothesis. With regard to their importance in phonics instruction, the Input Hypothesis posits that children need comprehensible input to activate the LAD and begin the acquisition of a second language. In addition, the comprehensible input needs to be slightly more advanced than their current level for them to progress in the language. Krashen termed this as "i+1", in which "i" refers to the information and "1" is the next stage of acquisition.

2.3.2 The Behaviourist Theory

Renowned behaviourist, B.F. Skinner (1957) suggested that language development occurred as a result of behavioural reinforcement in a child's environment. The behaviourist theory suggests that 'external stimuli (extrinsic) can elicit an internal response (intrinsic) which in turn can elicit an external stimuli that leads to external responses' (Larson-Freeman & Long, 1991). This process forms the chain of stimulus-response-reward because the environment will provide the stimuli naturally, and the learner will respond in return. Reward comes in when a child successfully responded to the stimulus. In Second Language Acquisition (SLA), the successful response to stimulus refers to the production of language. Behaviourists also stress on the importance of imitation. In the same manner, imitation provides learners with stimuli that encourage productive and appropriate responses. The two important characteristics

of learners in this theory are that; (i) they have the ability to respond to stimuli and; (ii) they are able to intuitively evaluate the reward gained from productive responses.

Behaviourists' view of language learning and of language teaching draw on general theories of learning propounded by psychologists such as Watson (1924), Thorndike (1932) and Skinner (1957). Daikin (1973) identified three general principles of language learning derived from these theories.

- 1. According to the law of exercise, language learning is promoted when the learner makes active and repeated responses to stimuli.
- 2. The law of effect emphasises the importance of reinforcing the learners' responses and correcting non-target-like ones.
- 3. The principle of shaping claims that learning will proceed most smoothly and rapidly if complex behaviours are broken down into their component parts and learned bit-by-bit.

(Daikin, 1973)

Underlying these principles was the assumption that language learning, like any other kind of learning, is like habit formation. According to this theory, prior knowledge is the main interference to the learning of a second language. Therefore, in order to learn a second language (L2), the first language (L1) must be unlearned (Daikin, 1973). However, this notion made little sense, as learners did not need to forget their L1 in order to acquire L2. For this reason, behaviourist theories of L2 learning emphasise the idea of difficulty. This is defined as the amount of effort required to learn an L2 pattern.

2.4.3 The Interactionist Theory

The interactionist approach incorporates aspects of both behaviourism and nativism. According to interactionism, both children's biological readiness to learn language and their experiences with language in their environment come together to bring about language development. Interactionists argue that both are equally necessary so that the child can develop language and both must work together. Chomsky (1976, p. 13) reiterated that every theory of learning incorporates an innateness hypothesis. Even

behaviourism attributes the ability to form associations of stimulus and response to the child. All learning theories in fact have to take into account both the learner and the situation; they are therefore all interactionist to some extent (Cook 1985, p. 7 in van der Walt, 1991).

The nativist, the behaviourist and the interactionist theories guide the models of reading discussed in this study. They form the underpinning theories in the reading models presented in the next section. In return, phonics is based on these models of reading. Synthetic phonics and analytic phonics are two schools of phonics that emerged subsequently from those reading models. The models of reading also differentiate the two types of reading instructions, phonics and whole-language.

2.5 Models of Reading

Goodman (1967) suggested that reading is a precise process which involves a sequential perception and identification of letters, words, spelling patterns and large language units. Pearson (1976) described three prominent sources of information readers draw on as they read; (i) semantic-associational information, (ii) syntactic information and, (iii) symbol-sound information. Semantic-associational information includes our knowledge of what words refer to in the real world and how words are hierarchically related to one another. Syntactic information refers to the ordering relationships among words in sentences. Grapho-phonemic (phonic, symbol-sound, or in Smith's term, visual) information is what beginner readers learn in the phonics component of their reading program.

This section is divided into two parts; (1) two models of reading that discuss the underlying processes of the phonics approach and, (2) four reading models that look at the complex process of reading. The two reading models in Part 1 are (i) the connectionist and (ii) simple view. The four reading models in Part 2 are (i) the bottom-

up model, (ii) top-down model, (iii) psycholinguistic model and (iv) interactive model of reading.

2.5.1 The Connectionist Model of Reading (Triangle Model)

Seidenberg and McClelland (1989) pioneered the connectionist models of word reading (see Figure 2.1). Seidenberg developed the connectionist networks that serve as a learning device to discover the complexity of the sound-spelling correspondences in the English Language. This highly interactive network system consists of three representations; (i) the orthography [spelling], (ii) phonology [sound] and (iii) semantic [meaning]. The three sides of this model also make it collectively known as the triangle model (Seidenberg, 2005).



Figure 2.1: The framework of 'triangle model' of word recognition developed by Seidenberg and McClelland (1989)

According to Plaut, McClelland, Seidenberg and Patterson (1996), there are two routes in converting orthography (spelling) to phonology (sound). The first is a direct pathway and the second is an indirect pathway that proceeds via word meanings. The connectionist model postulates that reading performance is accelerated when a connection develops between the visual forms of the letters and combinations of letters (orthography) and their corresponding sounds (Plaut et al., 1996, Seidenberg, 2005). This also leads to highly consistent words and nonwords pronounced faster than inconsistent words and nonwords.

2.5.2 Simple View of Reading

Rose's (2006) Simple View of Reading (SVR) is a model that acknowledges both the linguistic and phonics activities in the whole-language approach (Gough & Tunmer, 1986, cited in Dombey, 2009). Rose's SVR is an adaptation of Gough and Tunmer's (1986) 'simple-view' on reading which recommends a differentiation between word recognition and language comprehension processes. Rose (2006) claimed that reading fluency rely on the ability to decode words. For learners to be able to decode words, they need to acquire phonemic knowledge. The phonemic knowledge gives learners a ready-made 'self teaching device'.

Rose (2006) presented SVR as an approach for learning early reading. It consists of two integral processes, 'decoding' and 'comprehending' (see Figure 2.2). In other words, when learners pay attention to the decoding of a text, they will understand it. Pearson (2000) asserted that synthetic phonics adapts Rose's simple view of reading wholeheartedly.



Figure 2.2: The Simple View of Reading (Rose, 2006)

According to the SVR, decoding is the precursor to comprehension (Rose 2006). The comprehension equation in SVR is Reading Comprehension is the product of Language Comprehension and Decoding Ability ($RC = LC \times D$). However, this equation has been criticised as a standardised lab test questions. The lab-test questions may not truly assess a reader's comprehension when they are faced with more demanding texts that require more than decoding and listening comprehension. Nevertheless, proponents of SVR maintain this is a useful framework that allows researchers to conceptualise reading comprehension by predicting that children's performance in reading is influenced by the early stage of learning to read. Studies such as Demont and Gombert's (1996) had successfully proven tests of word recognition and standardised tests to be reliable in the first four years of school literacy education (Dombey, 2009).

2.5.3 Bottom-Up Processing in Reading

The bottom-up processing in reading is associated with the phonics-approach of teaching beginning reading. It emphasises on the ability to decode or to associate sounds to the prints on the text (Williams, 2004). Drawing on the behaviourist theory, the bottom-up process require readers to pick up a stimuli (in the form of letters or words for reading) from their environment and use their basic decoding ability to comprehend the information which is contained in the prints. Chall (1967), Gough (1972), LaBerge and Samuels (1974) are some of the known-figures of bottom-up theorists (Abraham, 2000). Gough (1972, cited in Treiman, 2001) proposed that readers attend to a printed text in a relatively complete and systematic manner. They extract information by dealing with the letters and words first.

The bottom-up approach views the ability to decode efficiently and the skill to recognise words automatically (lower-level) as vital skills. This is because efficient processing at the 'lower-level' of reading can enable learners to focus on the 'higher-level' processing. They can work on comprehending the texts (Grabe & Stoller, 2002 in Purewal, 2008). In other words, for successful comprehension to take place, a learner needs to have the ability to decode texts and the ability of automatic word recognition.

Bottom-up models of reading thus can be seen as a hierarchical model, where the 'lower-level' is seen as the foundation of the 'higher-level'.

However, the linear systematic processes involved in this model seem rather restrictive for reading purposes. This is because the learners' experiences, culture and social experiences are not taken into account (Abraham, 2000). Nonetheless, in the studies of readers' eye movements, researchers have found that skilled readers fixate at least once on the majority of words in a text and process the letters and words rather thoroughly. The eye movement data portray reading as more of a bottom-up process rather than a top-down process. Comparisons of good and poor readers further support the claim that bottom-up processes play an important role in reading (Treiman, 2001).

2.5.4 Top-Down Processing in Reading

Top-down processes in reading focus on an individuals' prior knowledge and expectations (Goodman, 1967; Smith, 1971, 1982; Treiman, 2001). The information extracted from a text is largely dependent on the reader's background knowledge. In other words, in order to help them make sense of what is being read, readers contrast the information in texts by applying their experiences and world knowledge. The focus of this approach is on the readers as they interact with the text (Abraham, 2000). This existing or background knowledge is termed as 'schema' (Cook, 1989 cited in Purewal, 2008). The top-down reading perspective involves activating a reader's schemata to interpret the new information, and the new information will in turn be stored as a part of the knowledge store. The interaction between old and new information enables the individual to gain comprehension (Anderson & Pearson, 1988).

Bottom-up models had been rather restrictive in their processes, whereas the top-down approach seems to overemphasise and promote the higher-level processes (comprehension) in reading. Top-down models may neglect the lower-level processes (decoding and automatic word recognition ability) as a learner is assumed to have mastered these skills (Purewal, 2008). Eskey (1988) suggests that equal importance on lower-level and higher-level processes is needed for L2 learners because of their insufficient amount of vocabulary knowledge in their second language.

2.5.5 Psycholinguistic Model of Reading

Pearson (1976) asserts that the beginning reading strategies learners acquire concentrated on grapho-phonemic information (phonics) alone. There is a critical intermediate step that has been left out. Goodman (1976) also reiterates that phonics needs to be accompanied with semantic and syntactic information or in brief, phonics in context. In this psycholinguistic model (see Figure 2.3), reading involves the interaction between language and the reader's background knowledge in order to actively construct meaning.



Figure 2.3: Pearson's (1976) three prominent sources of information in reading

Efficient reading now takes on another notion, in addition to the reliance on prior knowledge and decoding ability, good readers produce guesses by using contextual clues. For successful reading to take place, readers are active in constructing and interpreting the text by picking up cues with their knowledge of the language. This understanding of reading had often been linked to the whole-language approach of reading, as the underlying focus is on meaning, rather than on the ability to decode (Purewal, 2008).

2.5.6 Interactive Model of Reading

Grabe (1988) agreed that reading is an act of multiples processes where readers use their automatic word recognition ability and prior knowledge to construe meaning. Considering the limitations of the previous three reading models (bottom-up, top-down, psycholinguistic), the interactive model of reading proposed by McClelland and Rumelhart (1981) suggests that there is a simultaneous or alternate use of bottom-up and top-down processes in achieving fluency in reading.

The concept of 'fluent' reading can be defined as that which enables learners to understand the meaning of the text without being hindered by the lack of efficient decoding skills (Purewal, 2008). Corresponding with the interactive perspective of reading, Hoover and Gough (1990) hypothesised that the process of reading (R) would require two essential components: (1) Decoding (D); and (2) Linguistic comprehension (L), where $R = D \times L$. Therefore, a reader with satisfactory knowledge of decoding skills together with linguistic knowledge will be able to read effectively and achieve successful text comprehension.

Yorio (1971, cited in Carrell, Devine & Eskey, 1998) said that the problems in L2 reading originates from the L2 learners' language problem particularly in the beginning level. This is because the language knowledge of L2 learners cannot be equated to that of the native speakers. Their imperfect knowledge of the second language hinder their guessing or predicting ability necessary to pick up cues while reading. However, Elley (1984, cited in Carrell, Devine & Eskey, 1998) disagreed that L2 readers have to achieve a level of language competence for successful reading in the second language to take place. She suggested that reading could aid L2 learners in the second language acquisition by improving their language proficiency. Stroller's (1986) reading lab approach supported Elley's idea. Stroller proposed an interactive model for second language reading. In Stroller's model, skills of the lower-level and higher-level

are interactively available to process and interpret the text. According to Treiman (2001), in most situations, bottom-up and top-down processes work together to ensure the accurate and rapid processing of information.

2.6 Relevant Studies

2.6.1 Studies that support Systematic Synthetic Phonics

This section presents two proponents of synthetics phonics (Bear, 1954, 1964; Johnston, McGeown & Watson, 2011). One discussed the importance of phonemic awareness which is a subset of all phonics programs (Snider, 1997) and another two investigated the benefits of systematic phonics instruction (Ehri, Nunes, Stahl & Willows, 2001; de Graaff, Bosman, Hasselman & Verhoeven, 2009).

2.6.1.1 Synthetic Phonics

In the late 1950s, the issue on early literacy centered on the best phonics approach for children's early reading attainment. Bear's (1959) experimental study compared the two phonics methods, analytical phonics and synthetic phonics. His experimental group was exposed to an intensive phonics instruction of thirty minutes a day during the first week of school using the Lippincott Company "Reading with Phonics" (1954). The control group had no special periods for phonics, and the phonics instruction was integrated with regular reading lesson. He concluded that the synthetic phonics group achieved a significantly better performance than the analytic phonics group after two semesters of the instruction.

In 1964, Bear conducted a follow-up study to determine the long-range effects of his first intervention. During the five-year period, the two groups of participants continued to receive phonics instruction that accompanied the basal-reading series. Basal-reading series immerse texts with particular spelling patterns that is modelled after the whole-language program (McCulloch, 2000). The same set of tests were given,
with an addition of twenty-word spelling test randomly drawn from spelling word lists for sixth, seventh, eighth and ninth grades; and twenty nonsense words (pseudowords) that contained decodable syllables. The rationale was to provide the pupils with the opportunity to apply their knowledge of sounding. Synthetic phonics group again performed significantly better in the both of the spelling tests.

In the years that followed Bear's (1959, 1964) studies, Wyse and Goswami (2008) critiqued the procedures used in synthetic phonics. They argued that synthetic phonics led to reading impairment of irregular words and the inconsistencies in the English spelling system made it impossible to teach beginning reading using this method. Johnston, McGeown and Watson (2011) studied on the long-term effects of synthetic phonics versus analytical phonics in the reading and spelling ability of 10-year-old boys and girls which would address those criticisms. Their studies were guided by the Connectionist model that suggests even irregular words contain information about pronunciation. The connectionist model of reading also guided the phonics instructions in the present study.

Johnston et al. (2011) compared data from the Clackmannanshire Study (carried out in Scotland) with data from schools in England. Scotland adopted synthetic phonics in their teaching of reading while England practices the mixed-method analytic phonics. Both the synthetic and analytical groups learned to read using phonic method early in their schooling. The Scottish-children group started out with several letter sounds, blending to read and segmenting to spell. They read unfamiliar words independently via the strategy, and received no instruction to guess unfamiliar word from context. On the contrary, the English-children group was exposed to high frequency words taught by sight. They were encouraged to guess unfamiliar words from context. Sounding and blending were secondary in identifying new words. Johnston et al. (2011) confirmed their first hypothesis 'because even irregular words contain some letter sounds that give a guide to pronunciation, those taught by the synthetic phonics method would have better word reading skills'. The synthetic phonics group outperformed the analytical phonics group in reading comprehension, word reading and spelling. They rejected their second hypothesis 'that if the irregularities in English spelling are problematical for a synthetic phonics approach, then reading exception and strange words would be particularly problematic for boys, for whom there is evidence that boys take a more phonological approach to reading'. They found the boys made no significant errors on irregular words than girls, and overall, the synthetic phonics group showed no impairment in reading irregular words compared to the analytic phonics group. Johnston, McGeown and Watsons reiterated on the effectiveness of synthetic phonics over analytical phonics in reading in English, although it is an opaque orthography.

In order to establish high validity, experimental research must encompass measurement of validity, internal validity and external validity. The instruments in the Johnston et al.'s study were adopted from tested and reliable sources such as Elliott's (1977) British Ability Scales Word Reading Test and Wilkinson's (1993) WRAT Reading Test. Johnston et al (2011) performed assessments in reading both before and after training and practised random sampling that included a large sample size.

Bear (1964) and Johnston, McGeown and Watsons' (2011) longitudinal studies are significant to the present study. It shows that synthetic phonics approach is effective in developing young learner's literacy, although both studies were conducted almost 50 years apart. It also shows that the synthetic phonics used in both experimental and control groups are more effective than analytical phonics in developing children's early literacy. Thus, this study is able to investigate on one variable, the systematicity of the phonics program.

2.6.1.2 Phonemic Awareness

Snider's (1997) work focussed on the implications of phonemic awareness on children's beginning reading. He replicated relevant study by looking into the relationship between early phonemic awareness (PA) training and subsequent reading achievement. Citing Liberman, Snakweiler, Fischer and Carter (1974); Lundberg, Wall and Olofsson (1980); Mann and Liberman (1984) and, Cunningham and Feeman (1984), Snider stressed on the role of phonemic awareness as a powerful predictor of children's success in future reading. Snider (1997) conducted one quantitative and one qualitative analysis, to investigate the causal relationship between phonemic awareness and beginning reading.

Snider employed five phonemic awareness tests. They were rhyme, sound oddity, blending tasks, phoneme segmentation and, phoneme manipulation. Snider recorded extreme variability in children's overall performance in the phonemic awareness tests. Three years after the first, two of the eighteen children sat for these tests again, and performed remarkably well on the phonemic segmentation and manipulation tasks. Snider concluded that kindergartners who could not complete phonemic segmentation and manipulation tasks were at risk for learning and reading disabilities.

The blending and phoneme segmentation presented in Snider's study are two important features of the synthetic phonics instruction. Thus, Snider's study has shown that the synthetic phonics training used in the present study help to develop the participants' phonemic awareness.

2.6.1.3 Systematic Phonics

Ehri, Nunes, Stahl and Willows (2001) analysed the effects of systematic phonics instruction using the effect size, to measure the difference in the performance of the systematic phonics group and non-systematic or no phonics group. They made six comparisons to gauge the immediate and long-term effects between the experimental and control groups, using the immediate and a delay of four months to one year test results. Their findings confirmed that the effectiveness of systematic phonics instruction lasted well beyond training. Additionally, it was found that children who were introduced and taught reading using the systematic phonics in the early grades performed better in reading than those who started reading with other methods. Similarly, it also boosts the spelling skills of the younger children, credited to the knowledge of letter-sound relationships.

"Findings of the meta-analysis confirmed that for and first instruction benefited beginners (kindergartners graders), phonics reading comprehension as much as it benefited reading miscellaneous words and decoding pseudowords."

(Ehri, Nunes, Stahl & Willows, 2001)

Ehri et al. (2001) also analysed Stuart's (1999) study. Stuart (1999, cited in Ehri et al., 2001) conducted a systematic phonics experiment with L2 learners whose first language was not English. He concluded that the systematic phonics group performed significantly better in reading and writing as compared to children who were exposed to a whole-language approach using big books. Ehri et al recommended a replication of Stuart's (1999) systematic phonics instruction research to assert its effectiveness with L2 learners, as well as to identify the best beginning reading instruction for English Language Learner (ELL) students. Stuart's (1999) research had been the only study with ELL students in the authors' meta-analysis and thus, more evidence is required to substantiate the conclusion. This present study fits the criteria listed with its systematic synthetic phonics instruction on ELL children that are at their beginning stage of learning reading.

De Graaff, Bosman, Hasselman and Verhoeven (2009) compared a systematic phonics approach with a nonsystematic approach. Although the authors did not explicitly specify the type of phonics method favoured, their experiments began with grapheme-phoneme correspondences (GPCs), blending for reading and segmenting for spelling. These characteristics directly portray the synthetic phonics approach. De Graaff et al.'s (2009) study entails two computer-based phonics programs; one carefully planned and the other available commercially. They introduced four dimensions to gauge the degree of systematicity in both programs. In the systematic program, first, the children encountered a planned set of phonics-through-spelling and synthetic-phonics activities. Second, the introduction to GPCs was done in 3 stages. It started with Stage A that contained 5 letters and; in Stages B and C, 3 letters and 2 letters were added respectively. Third, all the letter sounds were taught explicitly by a first-sound mnemonics procedure. Fourth, the degree of difficulty was increased gradually in the phonics-for-spelling activity. Their study concluded that the experimental group that experienced systematic phonics training performed better than the unsystematic phonics group in terms of phonemic awareness, reading and spelling.

Ehri et al. (2001) in their meta-analysis listed several good characteristics of a good study. Firstly, researches that employ experiments in their study are more reliable as they provide strongest evidence that the instructions rather than some other factors cause improvement in reading. Studies should examine the existing programs used in school and introduce an intervention instead of laboratory experiments where the probability of only one single progress is measured. Studies should also measure reading as an outcome of instructions. The characteristics of good experiments are further described by the inclusion of random assignment of subjects to experimental conditions, or Randomised Controlled Trials (RCT), an independent variable manipulated by researchers, and a consistency in both training conditions except for the type of intervention (Bryman, 2012). All these features are present in the present study.

2.6.2 Studies that contradict Systematic Synthetic Phonics

Opponents of synthetic phonics advocate analytic phonics or a whole-language phonics instruction. This section is composed of three opponents of synthetic phonics. Manning and Kamii (2000) contrasted the grapho-phonic information path in reading by proposing the glottographic system. Walton, Walton and Felton (2001) reported a better gain for the analytic phonics group. Watts and Gardner (2012) proposed a balanced approach by integrating HFW via the look-say approach into a synthetic phonics program.

Manning and Kamii (2000) based their study on the works of Ferreiro (1978, Ferreiro & Teberosky, 1979, 1982; Ferreiro & Gomez Palacio, 1982). Manning and Kamii investigated young children's development before reaching "invented" spelling, and looked at how children construct the knowledge of writing systems from their environment. Ferreiro drew inspiration from Piaget (1926, 1967) who theorised young children construct many objects in the environment, and as such, hypothesised they will construct theories about the writing systems too. One of the theories refers to the glottographic system, said to be based on the sounds of speech (Sampson, 1985). Children's construction of glottographic theory help them make inferences about specific bits of information they do not have, and in this study, their reading and writing skills via the two types of phonics instructions.

Manning and Kamii conducted five interviews with thirty-eight kindergarteners who had reading and writing tasks, over a period of eight months. There were two groups; half received phonics instruction in isolation from a self-identified phonics teacher and the other half received phonics instruction in context from a self-identified whole-language teacher. The former conducted daily phonic worksheets, oral-sound training, blending, segmenting, letter-sound correspondences and, sight word practices. Phonics rules on charts were displayed around the classroom walls. The latter taught phonics in context through shared reading, journal writing and writing demonstrations. The teacher engaged reading aloud, children's songs and often repeated their favourite poems and chants.

The general glottographic theory says that the whole language group constructed must have facilitated this group's making sense of the phonics instruction they received at appropriate moment. Manning and Kamii (2000) however debunked the traditional, behaviouristic view of children's learning to read and write is that they learn these skills by accumulating specific bits of grapho-phonic information. In return, they proposed the Piagetian constructivism which says that children will try to make sense of everything they encounter in their daily lives and construct general frameworks within which they can make sense of specific bits of knowledge.

Walton, Walton, and Felton (2001) presented another contrasting view of the benefits of synthetic phonics. Their work involved two experiments and a longitudinal study. They examined the effects of teaching rime analogy (understood as the larger units of sounds) and letter recoding (phonemes) on prereading skills and word reading. As reviewed earlier, the rime analogy is a characteristic of analytic phonics, while letter recoding or phonemes-based, is of the synthetic phonics. In other words, Walton et al. contrasted these two phonics approaches in their study to selected Grade 1 pre-readers who had weak prereading skills. For these participating children, the phonics instruction implemented was their first experience with direct tuition in reading. The children were randomly assigned into three groups; the rime analogy, the letter recoding or the control. Both the treatment groups received equal pre-reading skills such as the phonological awareness of initial, medial and final phonemes, rhyming and the letter-sound correspondences. The only difference between the two treatment groups where the training was concerned was the early reading strategy, whether they began with the rime analogy strategy or the letter-sound recoding strategy. The training lasted for

eleven weeks, and by the end of it, the participants altogether experienced two twentyfive-minute training sessions twice a week, equivalent to 1100 minutes.

Walton et al. (2001) reported an equal word reading ability for both treatment groups, with the exception of sight words, in which the rime analogy group had a better gain. They also reported that teaching rime analogy increases letter-recoding ability, but the converse is not true. However, both groups excelled in prereading, in comparison with the control group that received normal classroom reading instructions. They later confirmed their findings, after a set of longitudinal post-tests that stretched over four months. The team concluded that 'the study demonstrated that Grade 1 pre-readers with weak letter–sound and phonological skills would develop reading ability relatively quickly if given experience with the rime analogy or letter recoding strategies and the related pre-reading skills' (Walton et al., 2001). It was also observed that many of the children developed a new reading strategies independently having been exposed to either the rime analogy or letter recoding strategy. Lastly, the authors recommended systematic phonics tuition, citing this as the essential finding to this study.

Watts and Gardner (2012) further pointed out the inadequacy of a systematic synthetic phonics (SSP) program for reading attainment and conducted an intervention through an intensive training of High Frequency Words (HFW). The teaching of HFWs was conducted via the 'Look-Say' approach, a subset of the whole-word and whole-language paradigm. Citing Clay (1991), the authors claimed children rarely apply synthetic phonics strategy in independent reading unless instructed, and as such the low probability of producing fluent readers. Watts and Gardner's study bore resemblance to Solity and Vousden's (2009, cited in Watts & Gardner, 2012) experiment with 100 HFWs, and claimed children could read fluency and that word recognition required fewer phonics skills than advocates of synthetic phonics suggest.

Watts and Gardner (2012) reported that children who displayed a reading attainment that is above or equivalent to their chronological age also demonstrated a secure knowledge of phonics skills. They observed that children only used graphophonics knowledge to decode initial sounds but did not apply the skill to decode words, concluding pupils rely less on grapho-phonics skills and more on whole words. From the evidences gathered, Watts and Gardner recommended the teaching of HFWs, in addition to synthetic phonics training, and that this pluralist approach to the teaching of early reading is to ensure inclusion and educational achievement of all pupils (Smith & Roberston 2007, in Watts & Gardner, 2012).

However, Watts and Gardner's (2012) study is susceptible to the threats of internal validity with their small sample size of eight. There was no presence of a control group, and the children could have progressed in reading without the authors' intervention anyway. Their findings thus cannot be generalized to the mass. Although Walton et al. reported a better gain for the rime analogy group, it was on sight words, a component that is covered only after children have mastered GPCs, blending and segmenting in synthetic phonics. Nonetheless, the commonality of these studies is that they unanimously agreed on a systematic phonics instruction.

2.6.3 Connecting Models and Theories of Reading

The principles of Seidenberg and McClelland's connectionist model reflect the processes in the phonics approach applied for the experimental and control groups. In the phonics approach, participants are required to associate or connect the phonemes to their graphemes. When this process of grapheme-phoneme association is repeated, the knowledge gained from the repeated experience allows a reader to identify printed words in a single set of 'input-to-output' connections. The systematic synthetic phonics program applied in this study also shares Rose's (2006) concept of "phonics first and

fast" in the 'Simple View of Reading'. The participants in the experimental group begin by learning all grapheme-phoneme correspondences at a fairly brisk pace and blending is advocated as the means of decoding (Hepplewhite, 2005; Rose, 2006).

Treiman's (2001) study showed that the phonics approach presented in the present study could help to develop children's early L2 literacy. This is because the systematic synthetic phonics (SSP) approach follows the bottom-up processing in reading. The activities in systematic synthetic phonics approach is hierarchical, in which it trains children to acquire the letter-sounds first and then the decoding ability. SSP focuses on letter-sound training, and only after the children have acquired the targeted grapheme-phoneme correspondences, they are allowed to progress to the phonics training. As discussed previously, L2 learners have poor language experiences and thus it will be unfavourable to learn reading through the top-down processing. This is because this model assumes learners have mastered the lower-level processes of reading and requires children to rely on their background knowledge.

Widdowson (1979) stated that a text may contain multiple interpretations and thus the guessing strategy in 'Psycholinguistic Model of Reading' may not always be possible. Furthermore, readers of different background bring with them different prior knowledge and experiences in the process of making guesses. Proponents of phonics too argue that decoding ability is still essential to the process of reading. The decoding skills allow readers to verify the correctness of their guesses and that reading cannot be simply a guessing game (Oakhill & Garnham, 1988, cited in Purewal, 2008).

Ehri, Nunes, Stahl and Willows (2001) recommended a systematic phonics instruction research with second language (L2) learners who are at their beginning stage of learning reading to further gauge its effectiveness. De Graaff, Bosman, Hasselman and Verhoeven's (2009) study was focused on reading in Dutch, although they worked with ELL children. The present study aims to close in the gap with an experiment conducted with a group of children that were learning to read in English.

Groff (2001), when examining the effects of speech-sound-to-letter and letter-tospeech-sound in phonics teaching, had raised the benefits of phonics in improving students' spelling ability. According to Groff who cited Ehri and Wilce (1987) in his study, a proficient reader also makes a proficient speller when phonics cues are employed in decoding words but the same cannot be said when these cues are absent. Therefore, Groff concludes that developing students' awareness to letter-print relationships will benefit their learning-to-read. Moreover, synthetic phonics is measurable as the reading process follows the bottom-up reading model and is largely subjected to behavioural analysis (Stahl, 1998; Samuels, 2006; Reyhner, 2008). This allows the present study to investigate the effectiveness between systematic synthetic phonics and KSSR phonics trainings using the test materials by de Graaff, Bosman, Hasselman and Verhoeven (2009).

2.7 Summary

This chapter has presented the relevant theories in Second Language Acquisition (SLA) and the strategies to develop early literacy. The strategies branch out to the two major approaches for beginning reading; phonics and whole-language (Emans, 1973; Stahl, 2006; Wyse & Goswami, 2008). This chapter has also looked at the history and development of phonics that sees the two schools of phonics; analytical phonics and synthetic phonics. Other components of phonics such as the phonemic awareness and phonics instruction were also included. It was followed by the review on systematic and explicit phonics instruction. The study is conducted to ensure L2 learners would acquire the much-needed reading strategies to enhance their acquisition of early literacy. The literature has also presented the critique and the support for systematic synthetic phonic.

Various studies were presented and discussions were centered on the methodologies and the general conclusions that were being drawn. The next chapter presents the methodology for the present study.

CHAPTER 3: METHOD

3.1 Introduction

This study is quantitative in nature. It intends to prove two hypotheses through an experiment by determining whether or not the independent variable (type of phonics training) caused an effect on the dependent variable (the reading fluency and spelling ability of the children). It follows the features of a true experimental study with the inclusion of three key components – (i) pre-post test design, (ii) a treatment (or experimental) group and a control group and, (iii) random assignment of study participants (Oswald & Price, 2008). The participants were assigned randomly and equally into the experimental and the control groups, and both experienced 30-minute a day of phonics training, conducted five days a week over a period of eight weeks (a total of 1200 minutes).

The experimental group received intervention in the form of the systematic synthetic phonics (hereafter SSP) training. The procedure was adapted from de Graaff, Bosman, Hasselman and Verhoeven (2009) but some changes were administered – (i) the learning of Dutch to English, (ii) computer-model to teacher-model, and (iii) their prescribed phonemes where substituted accordingly to match those in the KSSR phonics group. Groff's (2001) investigative work on speech-sound-to-letter instructional approach was also used as the basis of the synthetic phonics training in this experiment. The control group continued to undergo the existing KSSR synthetic phonics program as stipulated in the standardised Malaysian national curriculum which was not taught systematically. The systematicity of KSSR Phonics was evaluated using the 'Guidelines for Examining Phonics Program' published by Texas Education Agency, 2002 (Appendix E). The eleven phonemes engaged in this study are represented by sixteen respective graphemes '/eɪ/ - ay, ai; /əʊ/ - ow, oa; /aɪ/ - ie, igh; /iː/ - ee, ea; /oː/ - or; /ʊ/ - oo; /oi/ - oi,; /aʊ/ - ou; /uː/ - oo; /oː/ - er; /ɑː/ - ar'.

This chapter is organised into five sections; (i) Research Design, (ii) Participants, (iii) Instruments, (iv) Procedures and (v) Data Analysis. The first section 'Research Design' looks at the processes involved in designing the present study. The next section details the participants' background and level of proficiency. The third section presents the five instruments used and the reliability tests that have been performed prior to the study. The fourth section explains the procedures for the 'Systematic Synthetic Phonics Training' and 'KSSR Phonics Training'. Finally, the fifth section details the types of SPSS tests used to analyse the data collected from the instruments.

3.2 Research Design

As mentioned, this study conformed to the quantitative research tradition. The findings sought to confirm the hypotheses which were formulated based on Bloomfield's Linguistic System (1961) and Rose's Simple View of Reading (2006). This experimental study took place in a real-life natural setting of an educational organisation, inspired by the shift in educational policies that saw the implementation of phonics for early reading. The three components of a true experimental study – (i) prepost test design, (ii) a treatment group and a control group and (iii) randomised controlled trial postulated by Oswald and Price (2008) were fulfilled.

Firstly, the five tests (PLST, FSIT, RT, ST, ORFT) measuring the participants' reading fluency and spelling ability were administered once before the training as pretests. It was administered twice after the training as posttests. The rationale for the double testing in the posttests was to confirm the retention of the phonics skills for reading and spelling. The performance of the participants in both experimental and control groups was measured before and after the intervention so that a before-and-after analysis could be conducted (Bryman, 2012).

Secondly, two groups of participants were established. This formed the experimental manipulation, also known as the independent variable (Bryman, 2012). The independent variable in this study was the type of phonics training. The dependent variable was the students' performance in reading fluency and spelling ability. The experimental group received intervention in the form of the systematic synthetic phonics training. For the experimental group, the letter-sound training preceded phonics training and the phonics training was done in stages. The control group continued with their KSSR phonics training from Primary 1. KSSR phonics also adhered to the synthetic phonics training ran concurrently with occasional blending and segmenting activities. The stages and the systematicity of the systematic synthetic phonics and KSSR phonics are explained in the fourth section of this chapter.

Thirdly, this study used random assignment to place the participants into the two groups. Random assignment refers to the participants' equal opportunity to be assigned to either one of the two separate groups (Trochim, 2006). This study applied the technique of writing down the participants' names on thirty-two pieces of paper. The participants were segregated based on their level of language proficiency, obtained from the KSSR School-Based Assessment (Appendix F). There were 5 participants in Band 1, 20 participants in Band 2 and 7 participants in Band 3. The researcher then randomly picked three names from Band 1, ten names from Band 2 and, three names from Band 3 to be in the experimental group. The remaining sixteen was put into the control group (Table 3.1). This helped to create a better confidence for the end results, as the difference in the performance between the two groups would have been due to the experimental manipulation alone (Bryman, 2012). Figure 3.1 shows the summary of the design of this experimental study.

Level of proficiency from KSSR Assessment	Band 3	Band 2	Band 1	
		Overall		Total
	7	20	5	32
Number of Participants	Ex	perimental Gro	oup	
	3	10	3	16
		Control Group)	
	4	10	2	16

Table 3.1: Participants' Level of Proficiency



Figure 3.1: Design of the experimental study adapted from Trochim (2006)

Legend: Intervention X: Experimental group – Systematic synthetic phonics Business as usual: Control group – KSSR phonics Pretests, Posttests 1 and Posttests 2: PLST, FSIT, RT, ST, ORFT

3.2.1 Threats to Internal Validity

Internal validity of an experimental study. Internal validity is the differences found between groups on the dependent variable in an experiment which was directly related to what the researcher did to the independent variable, and not due to some other unintended variable (Del Siegle, 2005; Bryman, 2012). For this experimental study to achieve validity, it must eliminate possible effects of rival explanation and maintain that systematic synthetic phonics (independent variable) had a more positive impact on children's reading fluency and spelling ability (dependant variable) than KSSR phonics. It was meant to reinstate the hypothesis that the independent variable did indeed cause the dependent variable. This study identified four threats to internal validity; (i) history, (ii) testing, (iii) instrumentation, and, (iv) selection. The threats described below are as explained by Campbell (1957); Cook and Campbell (1979, cited in Bryman, 2012). *History*. According to Campbell (1979, in Bryman, 2012), the time lapse between the pretest and posttest might have increased the possibility that events other than the phonics training could have contributed to the children's improvement in their reading fluency and spelling ability. For example, the children could have progressed in their reading and writing skills from the daily English Language lessons. However, with the presence of the control group, where they also experienced the same language exposure as the experimental group, the possibility of this threat could then be discounted.

Testing. The children may have learned about the expected responses and scored better in their posttests with the experience gained at pretest (Campbell, 1979). Thus, the difference in the scores between the pretest and posttests may not be attributed to phonics training but the participants' experience in taking tests. However, the control group who went through the same pretests may also experience the same effects. The possibility of this threat could thus be discounted again.

Instrumentation. Instrumentation refers to the changes in the measuring instruments between the pretests and the posttests (Campbell, 1979). There is a possibility that changes in the administration of the tests could increase or decrease the test scores. The reliability of the instruments (PLST, FSIT, RT, ST and ORFT) is further discussed in 'Instrument'. In order to show that the improvement of the participants' reading fluency and spelling ability was due to the phonics program, it is important that the instruments used yield consistent results on repeated measurements. Thus, they need to be administered under the same conditions. However, with the presence of the control group, it was assumed that the changes would also affect them as well and, thus, allowing the threat to be discounted.

Selection. The differences in the mean scores of the two groups in an experimental study could be attributed to the pre-existing differences in their reading

fluency and spelling ability. To discount the possibility of this threat, the random assignment of participants was employed. The randomness helps to eliminate the possible bias of placing the more adept readers into a group, and the less into another group to claim that the improvement was due to the treatment being given.

3.3 Participants

There are twenty-four primary schools in the Bintulu division, and twenty of them are national schools (SK) while the other four are vernacular schools (SJK). The English Language curriculum designs for these two types of schools are different from one another. SJK schools have a simpler version of the English syllabus compared to SK schools. Of the twenty SK schools, eight are situated in the outskirts of the town, and categorised as rural schools (Bintulu District Education Office, 2013). Following census gathered in the year 2013 from the education office, there are altogether 136 Primary-2 children in the eight rural schools in Bintulu division. These rural schools are equipped with basic facilities and equipment such as 24-hour electricity supply and learning materials that ensure smooth implementation of learning activities.

Population. Gay (1996) define population as 'all the members of a particular group, group of interest to the researcher, and the group to whom the researcher would like to generalise the results of a study on'. The population in this study comprised of Primary 2 schoolchildren living along *Jalan Ulu Sebauh*, a mud-and-gravel path that caters mostly to the transport of palm oil. Gay (1996) and Oswald and Price (2008) recommended a minimum acceptable sample size of fifteen per group in an experimental study. The participants in the present study consisted of thirty-two Primary 2 schoolchildren, comprising sixteen boys and sixteen girls. They were from three neighbouring national schools located in the rural parts of Bintulu, Sarawak. Three schools were involved in this study as each school has low enrolment of 8 to 16 pupils in Primary 2. Gender, however, was not a variable in this study. Table 3.2 shows the

participants' mean age, socioeconomic status, and level of proficiency from KSSR assessment.

Mean Age	92.6 months (SD = 3.5 months)			
Socioeconomic status	Good	Average	Hardcore Poor	
	15	8	9	
Level of proficiency	Band 3	Band 2	Band 1	
from KSSR Assessment	7	20	5	

Table 3.2: Participants' Background

The children are a homogenous group, from the indigenous tribe '*Iban or Sea Dayak*'. The participants' socioeconomic statuses are categorised based on the 'Mean Monthly Household Income' and 'Poverty Income Lines' published by the Department of Statistics, Malaysia (2013). Those with good socioeconomic status are because their fathers work offshores in the oil and gas industry, thus their mothers are homemakers who also act as their main caretakers. The parents of the children with average background are classified as low-income earners and, the 'hardcore poor' children live with both their parents who are paddy and pineapple planters.

Six months prior to the commencement of the experiment, the researcher observed and interviewed the participants' parents and surrounding community at their respective longhouses to get acquainted with their English Language backgrounds. In the interview, the researcher read out the questions in the 'English Language Background Questionnaire' to the parents (Appendix G). The results were 93.75% of the parents do not understand, speak, read and write English at all, and 6.25% responded 'only a little'. It is thus deduced that the parents of these thirty-two children are illiterate in the English Language. Their immediate environment is strongly limited to their native language, *Iban*.

Prior to primary education, all the thirty-two participants have received a year of kindergarten education and mastered all the 26 letter-names in the English alphabet. However, according to the respective pre-school teachers, the participants' exposure to

the English Language (EL) was hardly present because they primarily focused on teaching Bahasa Malaysia. Formal learning, exposure to and immersion into the language thus began in Primary One. As KSSR phonics began in Primary One, they have learned and mastered all the thirty grapheme-phoneme correspondences of twentyone consonants, five short vowels, and four digraphs. This conclusion was made based on the results of the achievement test where all thirty-two of them received perfect scores, conducted at the beginning of the year 2013 (Appendix H). The participants are further categorised into three proficiency levels based on the formative assessments executed nationwide known as 'School-Based Assessments'. Performance indexes, constructs and awarding of bands are based on the criteria listed by the MOE. Band 1 is the lowest while Band 6 is the highest achievement. Seven of them are in Band 3, twenty are in Band 2, and five are in Band 1 (Appendix F). They have also been trained to receive simple instructions in English and instructions in phonics activities. Keywords to sounding, blending and segmenting are well comprehended and executed promptly. This was based on the individual testing of a phonics activity; the researcher gave instructions on recognising individual sounds, blending to read recognisable words and segmenting to spell (Appendix I). All thirty-two successfully performed the tasks as instructed.

The participants in this study are the researcher's existing students, as well as students of English teachers known to the researcher. The objectives and nature of the experiment were explained to the participants' parents prior to obtaining their consent. The participants met the following inclusion criteria: (a) indigenous children from the rural parts in Sarawak, (b) learning English as a foreign language, (c) undergoing KSSR phonics for reading and (d), the ability to attend phonics training for 30 minutes a day. Children with inappropriate learning behaviours, defined as the inability to work independently and to follow instructions were not included in this study.

3.4 Instruments

Pretest and posttests. The participants were tested thrice; once before the experiment commenced in May as pretest and, twice after the experiment in August and September as posttests. Five different tests measuring (a) productive letter-sound knowledge, (b) phonemic awareness, (c) reading ability, (d) segmenting/spelling ability and (e) sentence-level reading ability were administered to each child individually for a maximum of 30 minutes each (Appendix J). Tests (a) to (d) and their scoring criteria were adapted from de Graaff, Bosman, Hasselman and Verhoeven (2009). Test (e) and its scoring criteria were adapted from Eun (2012). The adaptations were necessary as the content needed to correspond to the phonemes introduced in this study. Each of the instruments is elaborated below.

This study recruited the help of one phonics-instruction trained teacher to act as the KSSR phonics trainer and also as the inter-rater (Teacher X, Appendix K). Teacher X holds a degree in Teaching English as a Second Language (TESL). She attended the phonics master training course organised by ELTC in the year 2011, and she had experienced implementing phonics for reading with Primary 1 and Primary 2 children previously in Bintulu. In April, two weeks prior to the pretest, the researcher and Teacher X attended two training sessions so as to ensure a uniform administration of the tests. The test sessions were simulated; they experienced the procedures and scoring of sounds/words in the five instruments. The tests took place in the evening at the school's library, after the day's schooling session has concluded (at approximately 1500 hours). The library was situated at a block some distance away from the classrooms. This provided a quiet surrounding. A digital camcorder was set up next to tables and chairs placed for the researcher and participants. The whole process was digitally recorded for all five tests, in order to allow an after-test review and cross-examination between Teacher X and the researcher. The Malaysian English curriculum uses Standard British English as a reference and model for teaching the language, as well as for spelling and pronunciation for standardisation (Standard Document, 2010). The judgment of the pronunciation of the individual sounds and words in the tests therefore attended to the standards set forth by the Ministry. As such, the judgment of the pronunciation of phonemes cross-referred to the phonemic chart from the British Council website. The judgment of the pronunciation of words was cross-referred with oxforddictionaries.com (Appendix L). The website provides pronunciation guide in the form of audio pronunciations and International Phonetic Alphabet (IPA) symbols in British English. Nonetheless, following studies by Glushko (1979); Plaut, McClelland, Seidenberg and Patterson (1996) and; Wang and Koda (2005), all acceptable pronunciations were scored correct. For example, the word 'sail' pronounced as /seil/ and /seil/ were both acceptable.

3.4.1 Productive Letter-Sound Test (PLST)

This test measures the participants' knowledge of the grapheme-phoneme correspondences (see Table 3.3). The 32 children were given letter cards containing the sixteen vowels presented during the training and asked to produce the phonemes (letter sounds). Teacher X or the researcher gave a short demonstration and the children practised with two non-tested GPCs before the actual testing commenced. The demonstration and practice were carried out to ensure that the children understood the requirement of this test, namely the sounds of the letters. This test carried a minimum score of 0 and a maximum score of 16, with 1 point being given for each successful sound-production.

Table 3.3:	Productive	Letter-Sound	Test

Demonstrated GPCs: ng, ur	
Practiced GPCs: ch, a, e	
ai /eɪ/	ou /aʊ/
oa /əʊ/	er /ə:/
ie /aɪ/	ar /ɑː/
ee /i:/	ay /eɪ/
or /ɔ:/	ow /əʊ/
00 /ʊ/	igh /aɪ/
oo /u:/	ea /iː/
oi /ɔɪ/	ue /u:/

3.4.2 Free Sound-Isolation Test (FSIT)

This test was conducted to test the 32 children's phonemic awareness. They were presented with a list of 12 consonant-vowel (CV) and 36 consonant-vowel-consonant (CVC) words (see Table 3.4). These words were selected from the KSSR Year 2 English textbook, and they included the vowel sounds presented in the experiment. The children were asked to segment the words on the word chart into their individual sounds; or to identify the phonemes present in a word. For example, the word 'pail' has three phonemes /p/ei/l/. Those children who have achieved phonemic awareness would be able to identify and say /p/, /ei/ and /l/. The teacher or the

researcher gave a short demonstration and children practised orally with two non-tested words before the actual test began. This test carried a minimum score of 0 and a maximum score of 132, with 1 point being awarded for each successful sound-production.

Demonstrate Practiced wo	d word: pail rds: coat, fork		
CV words		CVC words	
bow	loud	float	stern
lie	farm	sheep	cart
flow	maid	hook	light
tray	dream	boil	jail
die	train	herd	foam
day	mouth	room	cheek
grow	form	night	sh <i>oo</i> k
true	moon	cream	coin
glue	cloud	boat	nerd
pie	sharp	green	sport
play	torch	look	fight
sue	peak	join	stool

Table 3.4: Free Sound-Isolation Test

3.4.3 Reading test (RT)

A total of 3 CV, 13 CVC words, and 3 CV, 13 CVC pseudo words (non-words) were administered to gauge the children's blending skills (see Table 3.6). The final list was derived from a combination of words and pseudo words formed from the 21 consonants, 14 consonant blends (digraphs) acquired in Primary 1, and the 16 vowel sounds presented during the training. The items were both in accordance with the 5 stages of systematic phonics training and KSSR Phonics training.

The vowels 'ai /ei/, oa / $\vartheta \upsilon$ /, ie /ai/, ee /i:/ and or / ϑ :/' from Stage A formed 10 items (5 words, 5 pseudo words). The added vowels '*oo* / υ /, oo /u:/ and oi / ϑ i/' from Stage B formed another 6 items (3 words, 3 pseudo words) in addition to the 10 items above. The added vowels 'ou / $a\upsilon$ /, er / ϑ :/ and ar /a:/' from Stage C formed another 6 items (3 words, 3 pseudo words) in addition to the 16 items above. The added vowels

'ay /ei/, ow /əʊ/ and igh /ai/ from Stage D formed another 6 items (3 words, 3 pseudo words) in addition to the 22 items above and, the added vowels 'ea /i:/ and ue /u:/' from Stage E formed another 4 items (2 words, 2 pseudo words) in addition to the 28 items above. A summary is provided in Table 3.5.

Stage	Phoneme	Word	Pseudoword	Number of Item
A	ai /eɪ/ oa /əʊ/ ie /aɪ/ ee /iː/ or /ɔː/	said gloat lie steep stork	bain coam wie cheel chorm	10
В	00 /ʊ/ 00 /u:/ 0i /ɔɪ/	cr <i>oo</i> k droop coil	p <i>oo</i> k flop moin	6
C	ou /aʊ/ er /əː/ ar /ɑː/	stout perch chart	boust wern spart	6
D	ay /eɪ/ ow /əʊ/ igh /aɪ/	dray grow flight	glay drow spight	6
E	ea /iː/ ue /uː/	speak glue	pleak crue	4

Table 3.5: Summary of Words Formed from Stages A - E

The 32 children were presented with the list of 32 words, and were required to read each word aloud. In the event of a child mispronouncing the word, he/she was instructed to engage his/her phonics blending skills. However, if he/she still could not read the word after two additional tries, he/she was told to proceed to the next word. This test carried a minimum score of 0 and a maximum score of 32, with 1 point awarded for each successful word produced.

3.4.4 Segmenting Skill/ Spelling test (ST)

The 32 items (16 words/ 16 pseudo words) presented during the reading test (see Table 3.6) were reemployed to determine children's spelling ability. The 32 children were asked to write the sounds they heard in a word, in sequential order. This test carried a maximum score of 32, with 1 point awarded for each word spelt correctly.

Demonstrate Practiced wo	ed word: pail ords: coat, fork		
Words		Pseudoword	ls
said	gloat	bain	coam
lie	steep	wie	cheel
stork	crook	chorm	pook
droop	coil	floop	moin
stout	perch	boust	wern
chart	dray	spart	glay
growth	flight	drow	spight
speak	glue	pleak	crue

Table 3.6: Reading/ Spelling Test

3.4.5 Oral Reading Fluency Test (ORFT)

This test was administered in order to determine the participants' reading fluency, also defined as their ability to read a piece of text automatically and accurately with expressions. However, prosody was not included in the test as studies by Jiang et al. (2012) and Lems (2003, in Eun, 2012) reported on the difficulty to achieve an acceptable reliability given the subjective nature of deciding desirable prosody. The text was adopted from Jolly Readers Level 2, published by Jolly Learning Limited (Appendix M). The book features words that are phonetically decodable, and can be sounded out with the 21 consonants, 14 consonant blends (digraphs) acquired in Primary 1, and the 16 vowel sounds presented during training in the current study. However, unlike the 'Reading Test (RT)', ORFT assessed participants' ability to read at sentence level (complete simple sentences and compound sentences) and, counted the number of words the children read in a minute.

Two copies of the text were printed; the trainer and the children had a copy of the same reading text each. The children were instructed to begin reading aloud, and while they read, the trainer noted any errors the children made by circling the mispronounced words in her copy. Once the minute on the stopwatch held by the researcher or the teacher was up, the researcher or teacher marked in her sheet the children's progress at the 60th second and let them finished up reading the text. The researcher or the teacher then totalled the number of words read within 60 seconds, and subtracted them with errors made by the children.

For the purpose of this study, only errors made on the trained vowel sounds were taken into account. For example, if 'Child A' read 65 words in a minute, but made a total of 6 errors (2 untrained-vowel words, 4 trained-vowel words), his/her reading rate would be 61 words correct per minute. The children's oral reading fluency rate was compared against the benchmark adapted from Johns and Berglund (2006). The chart (see Table 3.7) is based on research conducted in English by Johns (2005) for children in first grade through eighth grade. Although the children in the United States begin first grade at six years old, this chart was adapted to suit the participants in this study as their formal reading instructions only began formally in Primary 1 (seven years old). Hence, their reading fluency was gauged according to the standard in 'Second Grade – June', 70 correct words per minute.

	Correct words per minute
May	20
September	50
February	50
June	70
October	90
February	70
June	90
October	110
February	95
June	110
October	125
February	110
June	125
October	140
February	125
June	140
October	150
	May September February June October February June October February June October February June October February June October February

 Table 3.7:
 Mean Words "Targets" for Average Student

Adapted from Johns and Berglund (2006)

3.4.6 Reliability of Instruments

Reliability is the consistency of the results from an instrument on repeated measurements. Reliability contains three broad aspects; (i) equivalence, (ii) stability and, (iii) internal consistency (Miller, 2012, in Bryman, 2012). There are four methods to evaluate the reliability of an instrument and they are namely; split-half reliability, test-retest reliability, parallel forms reliability and, inter-rater reliability (Korb, 2009). This study employed two methods of evaluation to establish the instruments' reliability. Firstly, test-retest reliability is used to assess the stability (Miller, 2012). Secondly, inter-rater reliability is used to determine the consistency of two separate raters (Bryman, 2012).

Test-retest reliability. Test-retest reliability determines how much error in a test score is due to problems with test administration. A test is said to contain stability when similar scores are obtained with repeated testing with the same group of respondents (Miller, 2012). Therefore, the purpose of the test-retest reliability is to establish the

stability of the instruments used in this study. Using the test-retest procedure, the five tests (PLST, FSIT, RT, ST, ORFT) were administered twice to eight non-participating Primary-2 children from a neighbouring school. The second test took place one week after the first test. The selected participants were not involved in the testing of reliability to avoid possible memorisation and familiarity with the instruments. To avoid possible influence on the test scores due to test takers' memories, the order of the words in the tests were rearranged. The conditions of the test administrations were kept the same. Both took place after the schooling hours and the other children have gone back home. This provided a quiet surrounding to minimise the noise disturbance as noises may contribute to cases of test administration unreliability (Brown & Abeywickrama, 2010).

The two sets of test scores obtained from pretest and posttest were then computed using SPSS to get the Intraclass Correlation Coefficient (ICC). Shrout and Fleiss' (1979) ICC (3,1) 'two-way mixed, single measures, type consistency' was used. ICC's *r* was used instead of Pearson's *r* because the ICC measures correlation within a class. ICC is used on constructs with repeated measures on the same participants (test-retest) and inter-rater (Romberg, 2009). ICC is interpreted as follows: .00-.20 indicates *poor* agreement: .30-.40 indicates *fair* agreement; .50-.60 indicates moderate agreement; .70-.80 indicates *strong* agreement; and >.80 indicates *almost perfect* agreement (Landis and Koch, 1977). The value of Cronbach's Alpha was also reported as another measure of reliability, as an agreement with the ICC about the high level of reliability between the two measures. A reliability coefficient of .70 or higher is considered "acceptable" in most Social Science research situations using Cronbach's Alpha (Garth, 2008).

The acronyms PLST, FSIT, RT, ST and ORFT stand for Productive Letter-Sound Test, Free Sound Isolation Test, Reading Test, Spelling Test and Oral Reading Fluency Test respectively.

	Ν	Mean	Difference	SE of Mean	Minimum	Maximum
PLST ^a	8	6.25	0.28	0.45	4.00	8.00
PLST-2	8	6.63	0.38	0.50	4.00	8.00
FSIT ^b	8	94.25	1.00	2.80	81.00	104.00
FSIT-2	8	95.25	1.00	3.01	81.00	104.00
RT ^c	8	13.50	0.12	1.25	6.00	18.00
RT-2	8	13.38	-0.12	1.19	8.00	20.00
ST^d	8	4.50	0.00	0.89	0.00	8.00
ST-2	8	4.50	0.00	0.87	1.00	8.00
ORFT ^e	8	34.25	0.25	5.98	27.00	44.00
ORFT-2	8	34.50	0.25	6.04	28.00	43.00

Table 3.8: Descriptive Statistics

^aMinimum = 0, Maximum = 16, ^bMinimum = 0, Maximum = 132, ^cMinimum = 0, Maximum = 32, ^dMinimum = 0, Maximum = 32, ^eWord per minute

Table 3.8 shows the test-retest mean scores of the five measures taken at pretests for the eight participants for one-week lapsed of time. The mean scores for PLST, FSIT, RT, ST and ORFT are 6.25, 94.25, 13.50, 4.50 and 34.25 respectively. The mean scores for PLST2, FSIT2, RT2, ST2 and ORFT2 are 6.63, 95.25, 13.38, 4.50 and 34.50 respectively. The difference in the mean scores of the test-retest for PLST, FSIT, RT, ST and ORFT are 0.38, 1.00, -0.12, 0.00 and 0.25 respectively. The negative value indicates a lower mean for the second pretest. Hence, it can be said participants scored higher in the second pretest for PLST, FSIT and ORFT, lower for ORFT, while ST remained the same. The ICC was then used to obtain the reliability of the test-retest.

	Intra	aclass Correlation	Reliability Statistics		
Tests	ICC	95% Confidence Interval		Cronbach's	N of
	ice	Lower Bound	Upper Bound	Alpha	Items
PLST	.768	.209	.949	.869	2
FSIT	.945	.754	.989	.972	2
RT	.804	.297	.957	.891	2
ST	.837	.386	.965	.911	2
ORFT	.961	.902	.996	.980	2

Table 3.9: Test-Retest Intraclass Correlation Coefficients and Cronbach's Alpha

The Intraclass Correlation Coefficient (ICC), single measures and type consistency was used in obtaining the values in Table 3.9. The ICC in PLST is .77. The value falls between .70 and .80. According to Landis and Koch (1977), this value shows

a strong agreement. The ICC in FSIT, RT, ST and ORFT are .95, .80, .84 and .96 respectively. The values of ICC for these four instruments are more than .80. According to Landis and Koch (1977), this value shows a near perfect agreement. The values of Cronbach's Alpha for PLST, FSIT, RT, ST and ORFT are .87, .97, .89, .91 and .98 respectively. These high values of > .70 indicate an agreement with the ICC in the high level of reliability between the two measurements in PLST, FSIT, RT, ST and ORFT. This test-retest procedure proves the stability of the instruments used in this study.

Inter-rater Reliability. Inter-rater reliability refers to the homogeneity in the scores. It is said to occur when two or more scorers yield consistent scores of the same tests (Brown & Abeywickrama, 2010). There are two raters in this study, the researcher and Teacher X. The test-takers' production of sounds (phonemes) and reading were subjected to the two raters' judgment. In order to determine the consistency of the two raters, the Intraclass Correlation Coefficient (ICC) was computed to assess the relationship between the scores by Rater₁ and the scores by Rater₂. The ICC used was Shrout and Fleiss' (1979) (3,1) model; two-way mixed, single measures and type consistency. The value of Cronbach's Alpha is also reported to complement the ICC on the high level of reliability between the two raters. A reliability coefficient of 0.70 or higher is considered "acceptable" in most Social Science research situations using Cronbach's Alpha (Garth, 2008).

	N	Mean	Diff.	SE of Mean	SD	Minimum	Maximum
$PLST^1$	8	6.25	0.29	0.45	1.28	4.00	8.00
$PLST^2$	8	6.63	0.38	0.42	1.19	5.00	8.00
$FSIT^1$	8	94.25	2 50	2.80	7.91	81.00	104.00
$FSIT^2$	8	96.75	2.30	3.05	8.63	82.00	108.00
RT^1	8	13.50	0.50	1.25	3.54	6.00	18.00
RT^2	8	14.00	0.30	1.45	4.10	6.00	18.00
ST^1	8	4.50	0.00	0.89	2.50	0.00	8.00
ST^2	8	4.50	0.00	0.89	2.50	0.00	8.00
$ORFT^1$	8	34.25	1 1 2	2.14	6.04	27.00	44.00
ORFT ²	8	34.38	1.13	2.22	6.28	28.00	45.00

Table 3.10: Descriptive Statistics

 $PLST^{1}$, $FSIT^{1}$, RT^{1} , ST^{1} , $ORFT^{1} = Rater 1$ $PLST^{2}$, $FSIT^{2}$, RT^{2} , ST^{2} , $ORFT^{2} = Rater 2$

Table 3.10 shows the two raters' mean scores of the five measures at pretests for the eight participants. The mean scores of Rater₁ for PLST, FSIT, RT, ST and ORFT are 6.25, 94.25, 13.50, 4.50 and 34.25 respectively. The mean scores of Rater₂ for PLST, FSIT, RT, ST and ORFT are 6.63, 96.75, 14.00, 4.50 and 34.38 respectively. The difference in the mean scores of the two raters for PLST, FSIT, RT, ST and ORFT are 0.38, 2.50, 0.50 0.00 and 1.13 respectively. Rater₂ had scored participants higher for PLST, FSIT, RT and ORFT while ST remained the same. The Intraclass Correlation Coefficient was then used to obtain the reliability coefficient of the two raters.

	Intra	class Correlation	Reliability Statistics		
Tests	ICC	95% Confide	ence Interval	Cronbach's	N of
icc		Lower Bound	Upper Bound	Alpha	Items
PLST	.725	.114	.938	.841	2
FSIT	.977	.890	.995	.988	2
RT	.913	.628	.982	.954	2
ST	1.000	1.000	1.000	1.000	2
ORFT	.953	.786	.990	.976	2

Table 3.11: Intraclass Correlation Coefficients and Cronbach's Alpha

The Intraclass Correlation Coefficient (ICC), singles measures and type consistency was used in obtaining the values in Table 3.11. The ICC in PLST is .73. The value falls in between .70 and .80. According to Landis and Koch (1977), this

shows a strong agreement. The ICC in FSIT, RT and ORFT are .98, .91, and .95 respectively. The values of ICC for these three instruments are more than .80. According to Landis and Koch (1977), this value shows a near perfect agreement. The values of Cronbach's Alpha for PLST, FSIT, RT, and ORFT are .84, .99, .95, and .98 respectively. These high values of > .70 indicate an agreement with the ICC in the high level of reliability between the two raters in PLST, FSIT, RT, and ORFT. The ICC in ST is 1.00. The perfect value indicates a linear correlation. The Cronbach's Alpha value of 1.00 indicates a perfect agreement with the ICC in the high level of reliability between the two raters in ST. This inter-rater reliability procedure substantiates the homogeneity in the test scores given by the researcher and Teacher X.

3.5 **Phonics Training Procedures**

Before conducting the phonics experiments, the teacher, who was also the researcher, had attended and received one week of intensive phonics training in year 2011. The master training was organised by the Bintulu District Education Office and conducted by two instructors from the English Language Teaching Centre (ELTC), Kuala Lumpur, Malaysia. The researcher holds a degree in Teaching English as a Second Language (TESL) and has been implementing KSSR phonics for reading since year 2011 (Appendix N). In this study, the researcher conducted the Systematic Synthetic Phonics training with the experimental group. It was mentioned above that this present study engaged the help of one phonics-instruction trained teacher to carry out KSSR Phonics training with the control group. Prior to the actual experimentation, the researcher and Teacher X simulated the training procedures in Systematic Synthetic Phonics twice to ensure a uniform administration of the phonics training.

The experiment consisted of two types of training; the systematic synthetic phonics (the experimental group) and the KSSR synthetic phonics (the control group). Both phonics-training programs contain 40 sessions of 30-minute each that were executed over a period of eight weeks. The training duration and session were planned in conformity with the KSSR Primary 2 English Language syllabus. The participants have 60 minutes of English lesson daily from Mondays to Fridays and learn an approximate of 9 GPCs in 8 weeks. Both the experimental and control groups were given the same 11 long vowel and diphthong sounds (phonemes) represented by 16 graphemes '/e1/ - ay, ai; /əʊ/ - ow, oa; /a1/ - ie, igh; /i:/ - ee, ea; /ɔ:/ - or; /ʊ/ - *oo*; /ɔ1/ - oi,; /aʊ/ - ou; /u:/ - oo; /ə:/ - er; /a:/ - ar'. Thus, both groups have 16 grapheme-phoneme correspondences. The IPA symbols were not introduced to the participants to avoid possible confusion. The focus of the experiment was maintained at letter sound

associations to their spelling. The graphemes were put into brackets / / to indicate the sounds. For example, children were introduced to /ai/, learn the sound of /ai/ as in 'bait' and, recognise and spell /ai/ as 'a-i' instead of its IPA symbol /eɪ/.

The 11 phonemes were chosen based on their difficulties posed to children in reading and spelling (Shemesh & Waller, 2000). Shankweiler and Liberman (1972, in Ehri et al. 2001) too place importance on the teaching of vowels believed to be central in learning how to decode. The phonemes selected also complement the scope and content of the phonics components administered by the Ministry of Education for Primary 2 pupils that centered on vowel sounds (with the exception of two digraphs /wh/ph/ and one short vowel /v/ as in *book*).

The phonics training sessions for the experimental and control groups were conducted after schooling hours at 1500 hours. The experimental group had their training sessions at the researcher's school library, while the control group's training sessions were carried out at the school's audio-visual-aids room. The researcher purchased commercially available Jolly Phonics flashcards, word cards and phonics songs from the authorised distributor [Extrazeal (M) Sdn Bhd] in Malaysia. Meanwhile, the KSSR phonics group was trained using the materials in the form of textbook and activity book provided by the Ministry of Education.

3.5.1 Training scope and sequence

The 11 vowel sounds were represented by 16 graphemes; the rules that govern each choice of grapheme for spelling, when there is an alternative grapheme to a phoneme, are specified in Table 3.12. The rules were presented and demonstrated to the children using sample words and pictures during letter-sound training.

Phonemes (sounds)	Graphemes (Letters/ a combination of letters)	
/eɪ/	-ay When we hear 'a' saying its name at the end of a word, our first choice is to write '-ay'.	ai When we hear 'a' saying its name in the middle of a one- syllable word, our second choice is to write 'ai'.
/əʊ/	-ow When we hear 'o' saying its name at the end of a word, our first choice is to write '-ow'.	oa When we hear 'o' saying its name in the middle of a one- syllable word, our second choice is to write 'oa'.
/aɪ/	-ie When we hear 'i' saying its name at the end of a one- syllable word, our first choice is to write '-ie'.	igh When we hear 'i', followed by a 't', our second choice will be to write 'igh'.
/i:/	ee When we hear 'e' saying its name in the middle of a one- syllable word, followed by a single consonant sound, we often write 'ee'.	ea Another common way of spelling the sound 'e' when it says its name in the middle of a one-syllable word is 'ea'
/u:/	-ue When we hear 'u' saying its name at the end of a word, our first choice is to write '-ue'	oo When we hear 'u' saying its name in the middle of a word, our second choice will be to write 'oo'. Sometimes 'oo' can sound like /ʊ/ as in book.
\\\	00	
/ ɔ ː/	or	
/31/	oi	
/aʊ/	ou	
/əː/	er	
/aː/	ar	

Table 3.12: Phonemes and Graphemes with Alternative Spelling

Adapted from Shemesh & Waller (2000)

The systematic synthetic phonics group followed the sequence recommended by Jolly Phonics (2006). It begins with one grapheme for one phoneme, with the alternative grapheme (spelling) coming in after the first eleven had been completed. The sequence was /eI/-ai, /əʊ/-oa, /aI/-ie, /i:/-ee, /ɔ:/-or, /ʊ/-oo, /u:/-oo, /oI/-oi, /aʊ/-ou, /ə:/-er, /ɑ:/-ar, /eI/-ay, /əʊ/-ow, /aI/-igh, /i:/-ea and /u:/-ue. On the other hand, the KSSR
phonics group experienced the sequenced put forward by the Ministry, /ei/-ai, /i:/-ee, /ai/-igh, /ʊ/-oo, /u:/-oo, /a:/-ar, /ɔ:/-or, /əʊ/-ow, /ɔi/-oi, /ə:/-er, /ei/-ay, /aʊ/-ou, /ai/-ie, /i:/-ea and /u:/-ue.

3.5.2 Systematic Synthetic Phonics Training

The procedure in conducting the systematic synthetic phonics training was replicated from de Graaff, Bosman, Hasselman and Verhoeven (2009). It was modified from their computer-assisted model to human model. The training was divided into two parts, commencing with the letter-sound training followed by the phonics training (Appendix P).

The letter-sound training introduced the phonemes and their respective spelling. It was organised into two sections, (i) the receptive and (ii) the productive. In the process, the group firstly listened to the phonemes before being presented with the graphemes. Pictorial clues, containing items that have the vowel sounds in the medial positions were incorporated in the early stage. For example,/oa/-/əʊ/ as in 'boat' is written on the picture of the boat. As the children progressed and successfully associate the letter-sounds to their spelling, the pictures were removed, leaving them with just the graphemes.

In the receptive way of training, the researcher would produce a sound. The children listened to the sound first, and had to select the corresponding grapheme out of the four graphemes (letter) cards distributed to them individually. In the productive way of training, the children saw the grapheme cards first, and had to select one of the four phonemes (numbered accordingly) presented orally by the researcher. In each session, one grapheme-phoneme correspondence (GPC) was taught, and altogether, the 16 sessions were allocated for letter-sound training.

The phonics training comprised 24 sessions and required the participants to practise reading, blending and segmenting randomly presented words or pseudowords.

Pseudowords are a pronounceable combination of graphemes that have the characteristics of a known real word, but are not real words according to common English dictionaries (Cardenas, 2009, in de Graff et al., 2009). The phonics training was divided into five stages. Each stage consists of five phases.

For example, at Stage A, children practised with randomly presented words/ pseudowords with the five grapheme-phoneme correspondences (GPCs) of eI/-ai, /əʊ/oa, /aI/-ie, /i:/-ee, and /ɔ:/-or. Participants listened to the words/ pseudowords given by the researcher and filled in the blanks with the grapheme-cards provided to form the complete CVC words/ pseudo words. Each participant was given two attempts. Upon the second erroneous attempt, the correct answer was given. Participants jotted down the correctly formed words into their personal logbooks as a record of their individual progress. This allowed them to proceed at an individual pace.

In Phase 1, the graphemes at the beginning and the end of the word/pseudo word were given. In Phase 2, only the grapheme in the end was given. In Phase 3, the grapheme in the beginning was given. In Phase 4, no graphemes were given and; in Phase 5, a complete CVC word/ pseudoword was given. In Phase 5, participants had to select the corresponding word or pseudo word spoken by the trainer out of the four presented word-cards (1 target word, 3 distractors) [see Table 3.13].

Phase	Samp	le Item word)	(CVC	Description	Example
1				Graphemes at the beginning and the end given	md fm
2	maid	jail	train	Grapheme in the end was given	d m
3	goat lies	toast pies	<i>Joam</i> ties dies	Grapheme in the beginning was given	m f
4	sheep wheel	green torch	cheek sport	No graphemes were given/ presented	
5	wheel torch sport fork form *words in italic are used as examples		e used as	A complete CVC word/ pseudoword is given; children select the corresponding spoken word by the trainer; out of the 4 given (1 target word, 3 distractors)	 maid** foam form green **target word

Table 3.13: Summarised Details of Phases in a Stage

In the following two sessions, the children practised blending to form complete word/ pseudoword. They also learned to take apart the words (segmenting) for spelling. Each child worked individually and was given a set of letter cards containing the graphemes and the focused vowel sounds learnt in Primary 1. Before the children could begin, the researcher demonstrated smooth blending and segmenting as a part of the blending and segmenting skills training. Smooth blending refers to the sounding of phonemes without pausing. Smooth segmenting refers to the automatic association of a phoneme to its grapheme. The construction of 15 words at the first four phases and the synthesising of 10 words in Phase 5 entitled the children to proceed to the blending and segmenting phase. If all the five phases within a stage were completed, and the children were able to blend and segment 10 words/ pseudowords (each child has an individual score sheet), they could progress to the next stage.

Three new GPCs are added in Stage B ($/\upsilon$ /-*oo*, /u:/-oo, $/\sigma$ I/-oi), Stage C ($/a\upsilon$ /-ou, $/\sigma$:/-er, $/\alpha$:/-ar), Stage D (/eI/-ay, $/\sigma\upsilon$ /-ow, /aI/-igh) and lastly, two in Stage E (/i:/-ea, /u:/-ue). When all the five stages have been completed, children repeated the five phases in Stage E until all 24 sessions were fulfilled.

3.5.3 KSSR Phonics Training

For KSSR phonics training, the letter-sound training and phonics training ran concurrently. Teacher X followed the phonics instructions and activities stipulated in the KSSR Year 2 English Language textbook (TB). The textbook was published by *Dewan Bahasa dan Pustaka*, Kuala Lumpur and is used in national schools (SK) nationwide. The textbook incorporates all the four language skills – listening, speaking, reading and writing. For the purpose of this experimental study, Teacher X only extracted the phonics components, the accompanied word list and reading texts from the textbook (Appendix Q). The phonics components were present in Unit 2, Unit 3, Unit 4, Unit 5, Unit 6, Unit 8, Unit 9, Unit 10 and Unit 12.

The 16 GPCs for the control group (ai-/et/, ee-/i:/, igh-/at/, oa-/əʊ/, oo-/ʊ/, oo-/u:/, ar-/a:/, or-/ɔ:/, ow-/əʊ/, oi-/ɔt/, er-/ə:/, ay-/et/, ou-/aʊ/, ie-/at/, ea-/i:/, ue-/u:/) were identical to the experimental group. However, the order of the introduction to GPCs differed from the experimental group. The sequence of the GPCs in KSSR phonics presented in the English textbook was as such; ai-/et/ and ee-/i:/ in Unit 2 (pp. 12-13); igh-/at/ and oa-/əʊ/ in Unit 3 (pp. 20 -21); *oo*-/ʊ/, oo-/u:/ and ar-/a:/ in Unit 4 (pp. 29-30); or-/ɔ:/ in Unit 5 (pp. 38 – 39), oi-/ɔt/ and ow-/əʊ/ in Unit 6 (pp. 46 – 47), er-/ə:/ in Unit 8 (pp. 62 – 63), ay-/et/ and ou-/aʊ/ in Unit 9 (pp. 70 – 71), ie-/at/ and ea-/i:/ in Unit 10 (pp. 78 – 79), and ue-/u:/ in Unit 12 (pp. 94 – 95). Table 3.14 shows the difference in the sequence of GPCs between the experimental (systematic phonics) and control group (KSSR phonics).

	The Sequence of GPCs									
	Expe	rimental	Group		Control Group					
1	ai /eɪ/	9	oi /si/	1	ai /eɪ/	9	oi /ɔɪ/			
2	oa /əʊ/	10	ue /uː/	2	ee /iː/	10	ow /əʊ/			
3	ie /aɪ/	11	er /əː/	3	igh /aɪ/	11	er /əː/			
4	ee /i:/	12	ar /ɑː/	4	oa /əʊ/	12	ay /eɪ/			
5	or /ɔ:/	13	ai /eɪ/	5	00 /ʊ/	13	ou /aʊ/			
6	00 /ʊ/	14	igh /aɪ/	6	oo /uː/	14	ie /aɪ/			
7	oo /uː/	15	ow /əʊ/	7	ar /ɑː/	15	ea /iː/			
8	ou /aʊ/	16	ea /iː/	8	or /3:/	16	ue /uː/			

Table 3.14: The Sequence of GPCs for both Groups

The KSSR phonics activities were repetitive in nature. The KSSR phonics training began with the introduction to and practices of sounding out the target phonemes. The children were to associate a phoneme to its corresponding grapheme by choosing the correct letter-card. Then, they were instructed to listen to a list of words presented to them by the teacher and to orally identify the vowel sound in those words. For example, the vowel sound in 'broach' is oa/əʊ/. After that, they were expected to know how to blend and segment by using the list of words provided in the textbook. The phonics training of every unit ended with a reading text. The text integrated some of the target GPCs and encompassed CVC, CV and VC words. The reading texts also contained two- and three-syllable words that would require the teacher to demonstrate using the whole-word approach. In each unit, two new phonemes were introduced, with no reference or revision of the past phoneme learned. Examples of the KSSR phonics activities are as follow.

Unit 2; /ei/-ai, /i:/-ee (pp. 12-13): This unit begins with the introduction to the phonemes ai-/ei/ and ee-/i:/ in 'Aim and Throw'. Teacher X instructed the children to throw balls into baskets labelled "ai" or "ee", correspond to the grapheme card raised by her. Then, 'What is My Word?' required the children to emulate Teacher X's demonstrations and blend phonemes to form complete words. The children blend words following the word lists provided in the textbook. Next, they got into two groups

(Group A and Group B) in '*Run and Match*'. Group A would say a word, and Group B reacted by picking the corresponding letter-cards to form the word on the board. The phonics component ends with a reading text in the form of a chant titled '*See! See!*'

Unit 3; /au/-igh, / $\partial \sigma$ /-oa (pp. 20-21): Unit 3 in the textbook begins with the introduction to the phonemes /igh-ai/ and /oa-/ $\partial \sigma$ / in '*The Right Boat*'. Teacher X said the phonemes out loud and simultaneously raised the grapheme cards. The children altogether picked the corresponding grapheme card and said the phoneme out loud. Next, the children got into two groups for '*Get It Right*!'. In this activity, each group member formed a word with the grapheme cards taken from a box. The children then blend the phonemes to form complete words. After that, the children participated in a whispering game called '*Hear Me Say*'. They took turns to pronounce the word aloud and segment it. The phonics training ends with a reading text in the form of a poem titled 'The Toad and the Goat'.

Due to the repetitive nature of KSSR phonics, the details of the phonics content and activities in the remaining units are presented in Table 3.15.

Unit/Page	Target Phonemes	Activities
4 (29-30)	/ʊ/-oo /u:/-oo /ɑ:/-ar	 a) In the Woods Teacher introduces the phoneme /v/ (represented by <i>oo</i>); /u:/ (represented by oo); /a:/ (represented by ar) the caw of the crow. b) Match the Sounds Teacher says aloud the phonemes and pupils blend them into a complete word. c) Bingo! Pupils are given a list of words with the target phonemes. Then, as the teacher reads aloud each word, they cross out the corresponding words. Crossing out 3 words in the same row entitles them to 'Bingo'. d) Read Aloud The Cook and the Rooster

Table 3.15: KSSR Phonics Content and Activities

5 (38-39)	/ɔ:/-or	 a) Bend Forward and Backward Teacher introduces the phoneme /ɔ:/ (represented by or). b) Throw Me In A pupil displays a word card and says the word. One of his/her friends reads the word and throws the beanbag into the correct sound box. c) Circle of Luck A pupil throws the beanbag into the circle. Then, the pupil picks up the word card on which the beanbag lands. He/She reads and segments the word on the card.
6 (46-47)	/ɔɪ/-oi /əʊ/-ow	 a) Join the Pieces Teacher introduces the phoneme /ɔi/ for oi and /əʊ/ for ow. Then, pupils compete among themselves to complete the puzzle. b) Fish Me Out Teacher says the word aloud and the pupils fish for the correct sound card. Then, pupils form and read the word on the board. The first pupil to finish wins the game. c) Find My Partner Pupils play Pelmanism or Memory Game. They read and segment the words.
8 (62-63)	/ə:/-er	 a) Get the Apple Teacher introduces the phoneme / ə:/ for er and articulates the phoneme. Then, pupils pick the corresponding sound card and stick them on the ladder. b) Pick and Form Teacher holds a stack of word cards with numbers written on the back. When a pupil says a number, the teacher segments the word on the card. The pupils say the word, then pick the correct sound cards and form the word on the board.
9 (70-71)	/eɪ/-ay /aʊ/-ou	 a) The Sound Wave Teacher introduces the phonemes /ei/ for ay and /aʊ/ for ou. b) Find the Sounds Pupils find the correct graphemes to form the words on the board. Then, they blend the words. c) Turn and Say Pupils play 'Turn and Say' to the game of 'TicTac-Toe'. They are to read and segment the words. d) Read Aloud A Hot Day, A Stormy Night

10 (78-79)	/aɪ/-ie /i:/-ea	 a) Pick and Read Teacher introduces the phonemes /ai/ for ie and /i:/ for ea. Teacher articulates the phonemes and lets the pupils pick the corresponding word cards and read them. b) Race to the Top Pupils get into 2 groups. Teacher says a word and the pupils from each group pick the corresponding word cards. Then, they read the word, segment it and stick the card on the board. c) Read Aloud Papa's Peach Cream Pies
12 (94-95)	/u:/-ue	 a) The Ball in the Air Teacher introduces the phoneme /u:/ for ue. b) Join It Pupils join the sound cards to form a word. Then, they blend the word. c) Beware the Claw Teacher picks a pupil to choose a card. The pupil flips the chosen card, reads and segments the word.
		Adapted from KSSR English SK Year 2 (2013)

3.5.4 Comparison of Phonics Training Procedures

Table 3.16 details the difference between the training procedures for both

systematic synthetic phonics and KSSR phonics groups.

Type of Phonics Training								
Systematic Synthetic Phonics	KSSR Phonics							
Part A: Letter-Sound Training 16 Vowel Sounds taught:	- Letter-Sound training and phonics training run concurrently.							
- Productively - Receptively	- Same set of 16 vowel sounds but in different sequence							
Part B: Phonics Training Practise reading and blending with randomly presented words/non-	- Each unit has a list of words provided.							
words. Systematic in 5 stages:	- Occasional blending and segmenting activities.							
Stages A to E Each stage has 5 Phases	- Each unit ends with a reading text.							
C								

Table 3.16:	Comparison	of Procedures
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3.6 Data Analysis

Data for this study were analysed using IBM Statistical Packages for Social Sciences (SPSS) version 21. Research Question 1 and the hypothesis were addressed through the analyses of paired-sample t-test for each outcome variable. Paired-sample t-test is used to compare the means of the pretest and posttest scores obtained from the experimental group and control group, in order to determine the effectiveness of the phonics training by looking at the significant difference between the two scores. The significance level is specified at .05 (alpha, $\alpha = .05$) or 95% confidence level.

To find out if there was any significant difference between the pretests, immediate posttest and 3-week lapsed posttest scores of the experimental and control groups, the one-way analysis of variance (ANOVA) with overall changes to both groups and multiple comparisons of time was used. The independent variable was the type of phonics training, while the dependent variable was scores from the PLST, FSIT, RT, ST and ORFT assessments. The repeated-measures-analysis was performed to test the difference in the mean scores between at pretest, immediate posttest and 3-week lapsed posttest. The significance level is specified at less than .05 (alpha, $\alpha < .05$). The Tukey Post-Hoc multiple comparison test was used to further identify the pair of means that really shows significant difference.

The one-way analysis of variance (ANOVA) with overall changes by groups and multiple comparisons by groups was used to determine whether the SSP group had better overall and acquisition of reading fluency and spelling ability than the children of KSSR phonics. The repeated measure analysis was performed to test the difference in mean scores between pretest, immediate and three weeks later posttest between the two groups. The significance level is specified at 95% confidence intervals. Scores are concluded to be significantly different if the two intervals do not overlap. Conversely, if the confidence intervals overlap, the scores are deemed to be not significantly different.

3.7 Summary

This chapter has presented the research design, background to the participants, instruments used for data collection, procedures and, data analysis. The research design detailed the elements of a randomised experimental study. The participants were introduced so as to outline their language proficiency prior to the experiment. The five instruments; (i) PLST, (ii) FSIT, (iii) RT, (iv) ST and (v) ORFT were subjected to two reliability tests, (a) test-retest reliability and (b) inter-rater reliability. There reliability rests were conducted to ensure the instruments yield accurate results. The procedures for systematic phonics training and KSSR phonics training were described with supporting details put as appendices. Finally, the data analysis listed the significance level for paired-sample t-test and, one-way analysis of variance (ANOVA).

CHAPTER 4: RESULTS

4.1 Introduction

This chapter focuses on the results of the tests. Quantitative data were gathered from five tests, Productive Letter-Sound Test (PLST), Free Sound Isolation Test (FSIT), Reading Test (RT), Spelling Test (ST) and, Oral Reading Fluency Test (ORFT). PLST and FSIT measure participants' knowledge of letter-sound relationships and phonemic awareness respectively. RT gauges their reading ability at word-level, in the sense of decoding and word recognition. ORFT determines their reading fluency by calculating the amount of words read in 60 seconds. ST determines their spelling ability, as this requires a combination of letter-sound relationships knowledge, phonemic awareness and decoding ability.

A total of three sets of scores were gathered from one pretest and two posttests. The first and second posttests were administered immediately after the treatment and three weeks after the treatment respectively. Data were firstly subjected to a "screening" to test the assumptions of normality and homogeneity of variance. When all the assumptions for parametric tests were met, data for this study was analysed via IBM's Statistical Packages for Social Sciences (SPSS) version 21.

The results section in this chapter is divided into four parts. The first part consists of the analysis of the pretest for both the experimental (SSP) and control groups (KSSR Phonics) using independent samples t-test. This was conducted in order to establish the equality among both groups' early literacy level prior to the intervention. Levene's test for equality of variance was applied. The other three parts address the hypothesis, by showing that children's assessment mean scores improved after the intervention. In each group, a paired-samples t-test was computed to compare the mean scores of the pretest and the immediate posttest. This was done in order to determine the impact of SSP and KSSR Phonics respectively. Next, the one-way analysis of variance (ANOVA) with overall changes to both groups and multiple comparisons of time was used to determine if there was a significant difference between the pretests, immediate posttest and 3-week lapsed posttest scores. Lastly, the one-way analysis of variance (ANOVA) with overall changes by groups and multiple comparisons by groups was used to confirm the hypothesis that the SSP group had overall performed better than the KSSR Phonics group in both reading and spelling. The significance level is specified at .05 (alpha, α = .05) or 95% confidence intervals. Scores are concluded to be significantly different if the two intervals do not overlap. Conversely, if the confidence intervals overlap, the scores are deemed to be not significantly different.

4.2 Analyses of pretest

The results of the pretest aimed at establishing the assumption of equality of variance are presented in Tables 4.1 and 4.2 below. The null hypothesis to be tested $(H_o: \mu_E = \mu_C)$ states that the PLST, FSIT, RT, ST and ORFT pretest mean scores of the experimental group is equal to the pretest mean scores of the control group. Conversely, the alternative hypothesis $(H_1: \mu_E \neq \mu_C)$ states that the pretests PLST, FSIT, RT, ST and ORFT mean scores of the experimental group is not equal to the pretests mean scores of the pretests mean scores of the control group. The significance level alpha is specified at .05.

	Groups	N	Moon	Std.	Std. Error
	Groups	IN	Mean	Deviation	Mean
PLST	Experimental	16	5.688	1.195	0.299
	Control	16	5.750	1.390	0.348
FSIT	Experimental	16	96.625	7.013	1.753
	Control	16	96.938	6.547	1.637
RT	Experimental	16	10.375	2.446	0.612
	Control	16	10.750	2.206	0.552
ST	Experimental	16	7.500	2.129	0.532
	Control	16	8.125	2.306	0.576
ORFT	Experimental	16	34.500	5.808	1.452
	Control	16	34.438	6.491	1.623

Tab	le 4	.1:	D	escr	ipti	ve	St	atist	tics

Based on the overall descriptive statistics in Table 4.1, overall, participants in the control group (PLST M = 5.75, SD = 1.39; FSIT M = 96.94, SD = 6.55; RT M =10.75, SD = 2.21; ST M = 8.13, SD = 2.31; ORFT M = 34.44, SD = 6.49) scored slightly higher in PLST, FSIT, RT and ST at pretest. On the other hand, participants in the experimental group (PLST M = 5.69, SD = 1.20; FSIT M = 96.63, SD = 7.01; RT M = 10.38, SD = 2.45; ST M = 7.50, SD = 2.13; ORFT M = 34.50, SD = 5.81) scored slightly higher in ORFT at pretest.

	Lev Tes Equa Vari	ene's at for lity of ances							
	F	Sig.	t	df	Sig.(2- tailed)	Mean Difference	Std. Error Difference	95% CI of Difference	
PLST	.104	.750	136	30	.892	063	.458	999	.874
FSIT	.062	.805	130	30	.897	313	2.399	-5.211	4.586
RT	.239	.628	455	30	.652	375	.823	-2.057	1.307
ST	.085	.772	797	30	.432	625	.785	-2.227	.977
ORFT	.092	.763	.029	30	.977	.063	2.177	-4.385	4.510

Table 4.2: Independent Samples Test

Based on the results of independent samples t-test in Table 4.2 for PLST, t(30) = .136, p = .892, 95% CI [-.999, .874]; FSIT, t(30) = .130, p = .897, 95% CI [-5.211, 4.586]; RT, t(30) = .455, p = .652, 95% CI [-2.057, 1.307]; ST, t(30) = .797, p = .432, 95% CI [-2.227, .977] and; ORFT, t(30) = .029, p = .977, 95% CI [-4.385, 4.510]. Since all the significant value was greater than alpha at .05 level of significance, there was no sufficient evidence to reject the null hypothesis. It can be concluded that there is no significant difference between experimental and control groups' pretests scores in PLST, FSIT, RT, ST and ORFT. Results from the Levene's test also showed that the equality of variances is assumed. Therefore, participants in both groups had similar levels of reading fluency and spelling ability and so were deemed comparable prior to the intervention.

4.3 Comparisons of immediate posttest scores

4.3.1 Research Question 1 and Hypothesis: The relative effect of SSP and KSSR phonics training

In order to find out if there was a difference between the immediate posttest scores of PLST, FSIT, RT, ST and ORFT assessments of the SSP group and KSSR Phonics group, an analysis of paired-samples t-test was computed. This was to analyse the mean scores of the pretest and the immediate posttest of the experimental and control groups. The significance level is specified at .05 (alpha, $\alpha = .05$). Results are presented in Tables 4.3 and 4.4 (for the experimental group), and Tables 4.5 and 4.6 (for the control group). To address the hypothesis that the native children who undergo the systematic synthetic phonics training would demonstrate a better improvement in their reading fluency and spelling ability than the children of KSSR phonics, a comparison was made by looking at the higher Partial Eta Squared value of the two groups.

The null hypothesis to be tested (H_0 : $\mu_1 = \mu_2$ or $\mu_1 - \mu_2 = 0$) states that the PLST, FSIT, RT, ST and ORFT mean scores of the pretests are equal to the mean scores of the posttests. Conversely, the alternative hypothesis (H_1 : $\mu_1 \neq \mu_2$ or $\mu_1 - \mu_2 \neq 0$) states that the PLST, FSIT, RT, ST and ORFT mean scores of the pretests are not equal to the mean scores of the posttests.

		Moon	N	Std.	Std. Error
		Mean	1	Deviation	Mean
PLST	Pretest	5.688	16	1.195	.299
	Posttest 1	13.875	16	1.857	.464
FSIT	Pretest	96.625	16	7.013	1.753
	Posttest 1	118.750	16	9.842	2.461
RT	Pretest	10.375	16	2.446	.612
	Posttest 1	24.875	16	3.096	.774
ST	Pretest	7.500	16	2.129	.532
	Posttest 1	19.250	16	3.493	.873
ORFT	Pretest	34.500	16	5.808	1.452
	Posttest 1	44.375	16	6.956	1.739

Table 4.3: Paired Samples Descriptive Statistics for Experimental Group

On average, based on the descriptive statistics shown in Table 4.3, it seems that the experimental group performed better in the posttests (PLST M = 13.88, SD = 1.86, FSIT M = 118.75, SD = 9.84, RT M = 24.88, SD = 3.10, ST M = 19.25, SD = 3.49, ORFT M = 44.38, SD = 6.96) as compared with the pretests (PLST M = 5.69, SD = 1.20, FSIT M = 96.63, SD = 7.01, RT M = 10.38, SD = 2.45, ST M = 7.50, SD = 2.13, ORFT M = 34.50, SD = 5.81).

	Pair Differe					95% CI of Difference		
	Mean	SD	t	df	Sig (2- tailed)	Partial Eta Squared	Lower	Upper
PLST								
Pretest –	-8.188	1.109	-29.54	15	.000	.880	-8.778	-7.597
Posttest 1 FSIT	00 105		2 4 00		0.00	6.4.1	24.020	
Pretest –	-22.125	3.557	-24.88	15	.000	.641	-24.020	-20.230
Posttest 1 RT								
Pretest –	-14.500	1.633	-35.52	15	.000	.878	-15.370	-13.630
Posttest 1 ST								
Pretest -	-11.750	2.266	-20.74	15	.000	.815	-12.957	-10.543
Posttest 1 ORFT								
Pretest -	-9.875	2.825	-13.98	15	.000	.388	-11.381	-8.369
Posttest 1								

Table 4.4: Paired Samples T-Test for the Experimental Group

The results of the paired samples t-test shown in Table 4.4 for PLST,

t(15) = 29.54, p = .000, 95% CI [-8.778, -7.597]; FSIT, t(15) = 24.88, p = .000,95% CI [-24.020, -20.230]; RT, t(15) = 35.52, p = .000, 95% CI [-15.370, -13.630]; ST, t(15) = 20.74, p = .000, 95% CI [-12.957, -10.543] and; ORFT, t(15) = 13.98,p = .000, 95% CI [-11.381, -8.369]. Since all mean differences are negative, the posttest results are better than the pretest results. Since all the significant value was smaller than alpha at .05 level of significance, the results suggest that there is sufficient evidence to reject the null hypothesis. Thus, it can be concluded that systematic synthetic phonics had a significant effect on the children's reading fluency and spelling ability.

		Maan	N	Std.	Std. Error
		Mean	IN	Deviation	Mean
PLST	Pretest	5.750	16	1.390	.348
	Posttest 1	10.188	16	1.940	.449
FSIT	Pretest	96.938	16	6.550	1.637
	Posttest 1	108.563	16	9.252	2.313
RT	Pretest	10.750	16	2.206	.552
	Posttest 1	20.313	16	3.005	.751
ST	Pretest	8.125	16	2.306	.576
	Posttest 1	14.063	16	2.670	.668
ORFT	Pretest	34.438	16	6.491	1.623
	Posttest 1	39.938	16	7.316	1.829

Table 4.5: Paired Samples Descriptive for the Control Group

Based on the descriptive statistics shown in Table 4.5, overall participants in the control group performed better in the posttests (PLST M = 10.19, SD = 1.94; FSIT M = 108.56, SD = 9.25; RT M = 20.31, SD = 3.00; ST M = 14.06, SD = 2.67; ORFT M = 39.94, SD = 7.32) as compared with the pretests (PLST M = 5.75, SD = 1.39; FSIT M = 96.94, SD = 6.55; RT M = 10.75, SD = 2.21; ST M = 8.13, SD = 2.31; ORFT M = 34.44, SD = 6.49).

	Paired						95%	CI of
	Differe	ences					Differ	rence
_	Mean	SD	t	df	Sig (2- tailed)	Partial Eta Squared	Lower	Upper
PLST								
Pretest –	-4.438	1.504	-11.80	15	.000	.648	-5.239	-3.636
Posttest 1								
FSIT								
Pretest -	-11.625	4.745	-9.80	15	.000	.359	-14.154	-9.096
Posttest 1								
RT								
Pretest -	-9.563	2.309	-16.57	15	.000	.778	-10.793	-8.332
Posttest 1								
ST								
Pretest -	-5.938	2.462	-9.65	15	.000	.602	-7.250	-4.625
Posttest 1								
ORFT								
Pretest -	-5.500	1.713	-12.85	15	.000	.144	-6.413	-4.587
Posttest 1								

Table 4.6: Paired Samples T-Test for the Control Group

From the results of paired samples t-test shown in Table 4.6 for PLST, t(15) = 11.80, p = .000, 95% CI [-5.239, -3.636]; FSIT, t(15) = 9.80, p = .000, 95% CI [-14.154, -9.096]; RT, t(15) = 16.57, p = .000, 95% CI [-10.79,3 -8.332]; ST, t(15) = 9.65, p = .000, 95% CI [-7.250, -4.625] and; ORFT, t(15) = -12.85, p = .000, 95% CI [-6.413, -4.587]. Since all mean differences are negative, the posttest results are better than the pretest results. Since all the significant value was smaller than alpha at .05 level of significance, there was sufficient evidence to reject the null hypothesis. It can be concluded that KSSR Phonics had significant effect on children's reading fluency and spelling ability.

As can be seen, the mean differences between the pretest and immediate posttest for all five assessments show a significant increase in the reading and spelling performances for both experimental (see Table 4.4) and control (see Table 4.6) groups at .05 level of significance. However, as seen in the Partial Eta Squared values, the experimental group gained significantly higher in all the five assessments (PLST = .880, FSIT = .641, RT = .878, ST = .815, ORFT = .388) compared to the control group (PLST = .648, FSIT = .359, RT = .778, ST = .602, ORFT = .144). This confirms the hypothesis that children who undergo systematic synthetic phonics will attain higher levels of reading and spelling than the children who receive KSSR phonics only.

4.4 Analyses of changes over time for both groups

4.4.1 Research Question 2: The retention of acquired reading fluency and spelling ability

To find out if there was a significant difference between the pretests, immediate posttests and 3-week lapsed posttest scores of the experimental and control groups, the one-way analysis of variance (ANOVA) with overall changes to both groups and multiple comparisons of time was used. The independent variable was the types of phonics approaches, while the dependent variable was scores from the PLST, FSIT, RT, ST and ORFT assessments. The repeated measures analysis was performed to test the difference in the mean scores between at pretest, immediate posttest and 3-week lapsed posttest. The results are presented in Tables 4.7, 4.8 and 4.9. The pair of means which shows a significant difference was further identified via the use of Tukey Post-Hoc multiple comparison tests.

The null hypothesis to be tested (H_o: $\mu_1 = \mu_2 = \mu_3$) states that the PLST, FSIT, RT, ST and ORFT mean scores of the pretests, immediate posttest (posttest 1) and 3week lapsed posttest (posttest 2) are equal. Conversely, the alternative hypothesis (H₁: $\mu_1 \neq \mu_2$ or $\mu_2 \neq \mu_3$ or $\mu_1 \neq \mu_3$) states that the PLST, FSIT, RT, ST and ORFT mean scores of the pretests, posttest 1 and posttests 2 are not equal. The significance level is specified at less than .05 (alpha, $\alpha < .05$).

				Std	Std.	95% Confidence		
	Time	Ν	Mean	Siu.	Siu. Error	Interval f	Interval for Mean	
				Deviation	EII0I	Lower	Upper	
PLST	Pretests	32	5.719	1.276	.226	5.259	6.179	
	Posttests 1	32	12.031	2.646	.468	11.077	12.985	
	Posttests 2	32	11.656	2.659	.470	10.698	12.615	
FSIT	Pretests	32	96.781	6.676	1.180	94.374	99.188	
	Posttests 1	32	113.656	10.727	1.896	109.789	117.523	
	Posttests 2	32	112.219	11.851	2.095	107.946	116.491	
RT	Pretests	32	10.563	2.299	.406	9.734	11.391	
	Posttests 1	32	22.469	3.902	.690	21.062	23.876	
	Posttests 2	32	22.438	3.934	.696	21.019	23.856	
ST	Pretests	32	7.813	2.206	.390	7.017	8.608	
	Posttests 1	32	16.656	4.037	.714	15.201	18.112	
	Posttests 2	32	17.000	4.119	.728	15.515	18.485	
ORFT	Pretests	32	34.469	6.059	1.071	32.284	36.653	
	Posttests 1	32	42.156	7.375	1.304	39.497	44.815	
	Posttests 2	32	41.844	7.406	1.309	39.174	44.514	

Table 4.7: Descriptive Statistics for Overall Changes Over Time

Table 4.7 shows the posttest mean values for both groups at immediate and 3-week elapsed (PLST₁ M = 12.03, SD = 2.65, PLST₂ M = 11.66, SD = 2.66; FSIT₁ M = 113.66, SD = 10.73, FSIT₂ M = 112.22, SD = 11.85; RT₁ M = 22.47, SD = 3.90, RT₂ M = 22.44, SD = 3.93; ST₁ M = 16.66, SD = 4.04, ST₂ M = 17.00, SD = 4.12; ORFT₁ M = 42.16, SD = 7.38, ORFT₂ M = 41.84, SD = 7.41) are higher than the pretest mean values (PLST M = 5.72, SD = 1.28; FSIT M = 96.78, SD = 6.68; RT M = 10.56, SD = 2.30; ST M = 7.81, SD = 2.21; ORFT M = 34.47, SD = 6.06).

Table 4.8: One-Way ANOVA for Overall Changes Over Time

		Sum of Squares	df	Mean Square	F	Sig
PLST	Between Groups	802.583	2	401.292	76.687	.000
	Within Groups	486.656	93	5.233		
FSIT	Between Groups	5601.583	2	2800.792	28.001	.000
	Within Groups	9302.156	93	100.023		
RT	Between Groups	3016.271	2	1508.135	125.710	.000
	Within Groups	1115.719	93	11.997		
ST	Between Groups	1735.896	2	867.948	68.285	.000
	Within Groups	1182.094	93	12.711		
ORFT	Between Groups	1211.583	2	605.792	12.452	.000
	Within Groups	4524.406	93	48.650		

As determined by one-way ANOVA for overall changes over time for both groups in Table 4.8, the PLST F(2,93) = 76.69, p < .05, FSIT F(2,93) = 28.01, p < .05, RT F(2,93) = 125.71, p < .05, ST F(2,93) = 68.29, p < .05 and, ORFT F(2,93) = 12.45, p < .05. Since the significant values for all the tests (p = .000) are smaller than α at .05 level of significance, the null hypothesis is rejected. There is adequate evidence to indicate that a significant difference exists between the mean values for pretests and the posttests.

	(I) Time	(J) Time	Mean Difference (I – J)	Std. Error	Sig.
PLST	Pretests	Posttests 1	-6.313 [*]	.572	.000
		Posttests 2	-5.938 [*]	.572	.000
	Posttests 1	Posttests 2	.375	.572	.790
FSIT	Pretests	Posttests 1	-16.875*	2.500	.000
		Posttests 2	-15.438*	2.500	.000
	Posttests 1	Posttests 2	1.438	2.500	.834
RT	Pretests	Posttests 1	-11.906 [*]	.866	.000
		Posttests 2	-11.875*	.866	.000
	Posttests 1	Posttests 2	.031	.866	.999
ST	Pretests	Posttests 1	-8.844*	.891	.000
		Posttests 2	-9 .188 [*]	.891	.000
	Posttests 1	Posttests 2	348	.891	.921
ORFT	Pretests	Posttests 1	-7.688*	1.744	.000
		Posttests 2	-7.375*	1.744	.000
	Posttests 1	Posttests 2	313	1.744	.982

Table 4.9: Multiple Comparisons for Overall Changes Over Time

^{*} The mean difference is significant at the .05 level

A post hoc comparison using Tukey HSD test (Table 4.9) indicates that the mean scores for PLST immediate posttest (M = 12.03, SD = 2.65, 95% CI [11.08, 12.99]) and 3-week lapsed posttest (M = 11.66, SD = 2.66, 95% CI [10.70, 12.62]) were significantly greater than pretest (M = 5.72, SD = 1.28, 95% CI [5.26, 6.18]). The mean scores for FSIT immediate posttest (M = 113.66, SD = 10.73, 95% CI [109.79, 117.52]) and 3-week lapsed posttest (M = 112.22, SD = 11.85, 95% CI [107.95, 116.49]) were significantly greater than pretest (M = 96.78, SD = 6.68, 95% CI [94.37, 99.19]). The mean scores for RT immediate posttest (M = 22.47, SD = 3.90, 95% CI [21.06, 23.88]) and 3-week lapse posttest (M = M = 22.44, SD = 3.93, 95% CI [21.02, 23.86]) were

significantly greater than pretest (M = 10.56, SD = 2.30, 95% CI [9.73, 11.39]). The mean scores for ST immediate posttest (M = 16.66, SD = 4.04, 95% CI [15.20, 18.11]) and 3-week lapse posttest (M = 17.00, SD = 4.12, 95% CI [15.51, 18.49]) were significantly greater than pretest (M = 7.81, SD = 2.21, 95% CI [7.02, 8.61]). The mean scores for ORFT immediate posttest (M = 42.16, SD = 7.38, 95% CI [39.50, 44.82]) and 3-week lapse posttest (M = 41.84, SD = 7.41, 95% CI [39.17, 44.51]) were significantly greater than pretest (M = 34.47, SD = 6.06, 95% CI [32.28, 36.65]). This means the null hypothesis which stated 'all the test mean scores are the same' is rejected. However, comparisons between the immediate and 3-week lapse posttest mean scores for PLST, FSIT, RT, ST and ORFT showed there was no statistically significant difference where p = .790, p = .834, p = .999, p = .921 and p = .982 respectively, at p < .05.

Taken together, these results suggest that both the systematic synthetic phonics (experimental group) and KSSR Phonics (control group) have an effect on children's reading fluency and spelling ability. Statistically, both groups improved significantly after the intervention. The effects are evident in the mean scores that increased from the pretest to the immediate posttest. Thereafter, there is not much change given the more or less levelling values of the mean between the immediate and 3-week lapse posttests. They are not statistically significant. Thus, it can be concluded that the training has long-term effects on children's reading fluency and spelling ability. In other words, the phonics skills do not regress with time.

4.5 Analyses of changes over time for by groups

4.5.1 Effects of type of phonics training and retention of literacy

The one-way analysis of variance (ANOVA) with overall changes by groups was used to determine whether the experimental group had better overall and acquisition of reading fluency and spelling ability than the children of control group. The significance level is specified at 95% confidence intervals. The repeated measures analysis was performed to test the difference in mean scores between pretest, immediate and three-week lapsed posttest between the two groups. The significance level is specified at less than .05 (alpha, $\alpha < .05$). The results are presented in Tables 4.10, 4.11 and 4.12.

According to du Prel (2009), scores are concluded to be significantly different if the two intervals do not overlap. The intervals do not overlap if the lower bound confidence interval (CI) of the higher mean scores is higher than the upper bound CI of the lower mean scores. Conversely, if the confidence intervals overlap, the scores are deemed to be not significantly different. Confidence intervals overlap when the lower bound CI of the higher mean scores is lower than the upper bound CI of the lower mean scores.

The null hypothesis to be tested (H_o: $\mu_1 = \mu_2 = \mu_3$) states that the PLST, FSIT, RT, ST and ORFT mean scores of the pretest, immediate posttest (posttest 1) and 3week lapsed posttest (posttest 2) between the experimental and control groups are equal. Thus, there will be no differences in the three mean scores between the two groups. Conversely, the alternative hypothesis (H₁: $\mu_1 \neq \mu_2 \neq \mu_3$) states that the PLST, FSIT, RT, ST and ORFT mean scores of the pretest, posttest 1 and posttest 2 between the experimental and control groups are not equal. Hence, there will be differences in the three mean scores between the two groups.

				Std	St4	95% Confidence	
	Time	Ν	Mean	Su. Deviation	Siu. Error	Interval f	for Mean
				Deviation	EII0I	Lower	Upper
Experin	nental Group						
PLST	Pretest	16	5.688	1.195	.299	5.051	6.325
	Posttest 1	16	13.875	1.857	.464	12.885	14.865
	Posttest 2	16	13.313	2.359	.590	12.056	14.569
FSIT	Pretest	16	96.625	7.013	1.753	92.888	100.362
	Posttest 1	16	118.750	9.842	2.461	113.506	123.995
	Posttest 2	16	117.625	10.532	2.633	112.913	123.237
RT	Pretest	16	10.375	2.446	.612	9.072	11.678
	Posttest 1	16	24.875	3.096	.774	23.225	26.525
	Posttest 2	16	24.813	3.229	.807	23.092	26.533
ST	Pretest	16	7.500	2.129	.532	6.365	8.635
	Posttest 1	16	19.250	3.493	.873	17.389	21.111
	Posttest 2	16	19.563	3.366	.841	17.769	21.356
ORFT	Pretest	16	34.500	5.808	1.452	31.405	37.595
	Posttest 1	16	44.375	6.956	1.739	40.669	48.082
	Posttest 2	16	44.125	7.228	1.807	40.273	47.977
Control	Group						
PLST	Pretest	16	5.750	1.390	.348	5.009	6.491
	Posttest 1	16	10.188	1.940	.485	9.154	11.221
	Posttest 2	16	10.000	1.789	.447	9.047	10.953
FSIT	Pretest	16	96.938	6.550	1.637	93.449	100.426
	Posttest 1	16	108.563	9.252	2.313	103.633	113.492
	Posttest 2	16	106.813	10.815	2.704	101.050	112.575
RT	Pretest	16	10.750	2.206	.552	9.575	11.923
	Posttest 1	16	20.313	3.005	.751	18.711	21.914
	Posttest 2	16	20.063	3.087	.772	18.418	21.707
ST	Pretest	16	8.125	2.306	.576	6.896	9.354
	Posttest 1	16	14.063	2.670	.668	12.640	15.485
	Posttest 2	16	14.438	3.119	.780	12.775	16.100
ORFT	Pretest	16	34.438	6.491	1.623	30.979	37.896
	Posttest 1	16	39.938	7.316	1.829	36.039	43.836
	Posttest 2	16	39.563	7.071	1.768	35.795	43.330

Table 4.10: Descriptive Statistics for Overall Changes Over Time by Groups

Based on the statistics shown in Table 4.10, the mean scores for the control group's PLST (M = 5.75, SD = 1.39), FSIT (M = 96.94, SD = 6.55), RT (M = 10.75, SD = 2.21) and ST (M = 8.13, SD = 2.31) are slightly higher than the experimental group's PLST (M = 5.69, SD = 1.20), FSIT (M = 96.63, SD = 7.01), RT (M = 10.38, SD = 2.45), ST (M = 7.50, SD = 2.13) at pretest. For ORFT, experimental group (M = 34.50, SD = 5.81) scored slightly above control group ORFT (M = 34.44, SD = 6.49). The table also shows the PLST, FSIT, RT, ST and ORFT at pretest 95% confidence intervals for mean

of the control group are [5.009, 6.491], [93.449, 100.426], [9.575, 11.923], [6.896, 9.354] and [30.979, 37.896] respectively and, the experimental group are in sequence, [5.051, 6.325], [92.888, 100.362], [9.072, 11.678], [6.365, 8.635] and [31.405, 37.595]. The lower bound CI of the higher mean scores is lower than the upper bound CI of the lower mean scores. This means the two intervals for PLST, FSIT, RT, ST and ORFT overlap, showing there are no significant differences in the pretest scores between the two groups.

Upon conduct of the intervention, an immediate posttest was also performed. The mean scores and 95% CI for mean of the experimental group's PLST, FIST, RT, ST and ORFT are M = 13.88, SD = 1.86, [12.885, 14.865]; M = 118.75, SD = 9.84, [113.506, 123.995]; M = 24.88, SD = 3.10, [23.225, 26.525]; M = 19.25, SD = 3.49, [17.389, 21.111] and; M = 44.38, SD = 6.96, [40.669, 48.018] respectively. Meanwhile, the control group's mean scores and 95% CI are as follows; PLST (M = 10.19, SD =1.94, [9.154, 11.221]); FSIT (M = 108.56, SD = 9.25, [103.633, 113.492]); RT (M =20.31, SD = 3.01, [18.711, 21.914]); ST (M = 14.06, SD = 2.67, [12.640, 15.485]) and; ORFT (M = 39.938, SD = 7.32, [36.039, 43.836]).

Overall, the experimental group scored higher than the control group in the immediate posttests. For PLST, FSIT, RT and ST, the lower bound CI of the higher mean scores are higher than the upper bound CI of the lower mean scores. This means the two intervals for PLST, FSIT, RT and ST do not overlap. Thus, there are significant differences in the scores between the two groups. As for the ORFT, the lower bound CI of the higher mean scores is lower than the upper bound CI of the lower mean scores. Thus, the confidence intervals overlap and this indicates the mean scores are not significantly different.

Another posttest was given out three weeks later after the intervention. The statistics are presented in Table 4.10. Results indicate that the experimental group

performed better than the control group in all five tests. The results and 95% CI for mean of the experimental group's PLST, FIST, RT, ST and ORFT are M = 13.31,

SD = 2.36, [12.056, 14.570]; M = 117.63, SD = 10.53, [112.913, 123.237]; M = 24.81, SD = 3.23, [23.092, 26.533]; M = 19.56, SD = 3.37, [17.769, 21.356] and; M = 44.125, SD = 7.23, [40.273, 47.977] respectively. Meanwhile, the control group's means and 95% CI are as follows; PLST (M = 10.00, SD = 1.79, [9.047, 10.953]); FSIT (M = 106.81, SD = 10.82, [101.050, 112.575]); RT (M = 20.63, SD = 3.09, [18.418, 21.707]); ST (M = 14.44, SD = 3.12, [12.775, 16.100]) and; ORFT (M = 39.563, SD = 7.07, [35.795, 43.330]).

Again, for PLST, FSIT, RT and ST, the lower bound CI of the higher mean scores are higher than the upper bound CI of the lower mean scores. This means the two intervals for PLST, FSIT, RT and ST again do not overlap, showing a significant difference between the two groups. However, the CI value of ORFT is lower and it overlaps, showing that they are not significantly different.

		Sum of	đf	Mean	Г	Sig
		Squares	ai	Square	Г	Sig
Experin	nental Group					
PLST	Between Groups	669.292	2	334.646	96.147	.000
	Within Groups	156.625	45	3.481		
FSIT	Between Groups	4969.500	2	2484.750	29.009	.000
	Within Groups	3854.500	45	85.656		
RT	Between Groups	2233.042	2	1116.521	128.850	.000
	Within Groups	389.938	45	8.665		
ST	Between Groups	1512.875	2	756.438	80.866	.000
	Within Groups	420.938	45	9.354		
ORFT	Between Groups	1014.500	2	507.250	11.325	.000
	Within Groups	2015.500	45	44.789		
Control	Group					
PLST	Between Groups	201.542	2	100.771	33.984	.000
	Within Groups	133.438	45	2.965		
FSIT	Between Groups	1257.167	2	628.583	7.684	.001
	Within Groups	3681.313	45	81.807		
RT	Between Groups	950.542	2	475.271	60.867	.000
	Within Groups	351.375	45	7.808		
ST	Between Groups	401.292	2	200.646	27.145	.000
	Within Groups	332.625	45	7.392		
ORFT	Between Groups	302.167	2	151.083	3.112	.054
	Within Groups	21.84.813	45	48.551		

Table 4.11: One-Way ANOVA for Overall Changes Over Time by Groups

As determined by one-way ANOVA for overall changes over time by groups in Table 4.11, the experimental group's PLST F(2,45) = 96.147, p < .05, FSIT F(2,45) = 29.009, p < .05, RT F(2,45) = 128.850, p < .05, ST F(2,45) = 80.866, p < .05 and, ORFT F(2,45) = 11.325, p < .05. Since the significant values for all the tests (p = .000) are smaller than α at .05 level of significance, the null hypothesis is rejected. These results suggest that a significant difference exists between the experimental group's mean values for pretests and the posttests.

Similarly, the control group's PLST F(2,45) = 33.984, p < .05, FSIT F(2,45)= 7.684, p < .05, RT F(2,45) = 60.867, p < .05 and ST F(2,45) = 27.145, p < .05. Since the significant values for these four tests are smaller than α at .05 level of significance, the null hypothesis is rejected. There is a significant difference between the mean values for the pretests and the posttests. However, the ORFT F(2,45) = 11.325, p > .05. The significant value (p = .054) is greater than α at .05 level of significance and this means there is no significant difference in the pretest and the posttest mean scores for ORFT.

		(I) Time	(J) Time	Mean Difference (I – J)	Std. Error	Sig.
Experimental	PLST	Pretest	Posttest 1	-8.188	.660	.000
Group			Posttest 2	-7.625*	.660	.000
		Posttest 1	Posttest 2	.563	.660	.672
	FSIT	Pretest	Posttest 1	-22.125	3.272	.000
			Posttest 2	-21.000*	3.272	.000
		Posttest 1	Posttest 2	1.125	3.272	.937
	RT	Pretest	Posttest 1	-14.500	1.041	.000
			Posttest 2	-14.438*	1.041	.000
		Posttest 1	Posttest 2	.063	1.041	.998
	ST	Pretest	Posttest 1	-11.750	1.081	.000
			Posttest 2	-12.063*	1.081	.000
		Posttest 1	Posttest 2	313	1.081	.955
	ORFT	Pretest	Posttest 1	-9.875	2.366	.000
			Posttest 2	-9.625*	2.366	.001
		Posttest 1	Posttest 2	250	2.366	.994
Control Group	PLST	Pretest	Posttest 1	-4.438*	.609	.000
Control Group			Posttest 2	-4.250*	.609	.000
		Posttest 1	Posttest 2	.188	.609	.949
	FSIT	Pretest	Posttest 1	-11.625	3.198	.002
			Posttest 2	-9.875*	3.198	.002
		Posttest 1	Posttest 2	1.750	3.198	.848
	RT	Pretest	Posttest 1	-9.563*	.988	.000
			Posttest 2	-9.313*	.988	.000
		Posttest 1	Posttest 2	.250	.988	.965
	ST	Pretest	Posttest 1	-5.938	.961	.000
			Posttest 2	- 6.313 [*]	.961	.000
		Posttest 1	Posttest 2	375	.961	.920
	ORFT	Pretest	Posttest 1	-5.500	2.464	.077
			Posttest 2	-5.125	2.464	.105
		Posttest 1	Posttest 2	.375	2.464	.987

Table 4.12: Multiple Comparisons for Overall Changes Over Time by Groups

As shown in Table 4.12, the significant values for all tests (p = .000) for the experimental group's Pretest to Posttest 1, and Pretest to Posttest 2 are smaller than α at .05 level of significance. This suggests that there are significant differences between the mean scores. However, as the significant values for all tests in Posttest 1 to Posttest 2

are greater than α at .05 level of significance, this suggests there is no significant difference in the mean scores.

Similarly, the significant values for PLST, FSIT, RT and ST for the control group's Pretest to Posttest 1, and Pretest to Posttest 2 are smaller than α at .05 level of significance. This suggests that there are significant differences between the mean scores. However, the control group's ORFT mean scores from Pretest to Posttest 1 and Pretest to Posttest 2 are greater than α at .05 level of significance. This suggests there is no significant difference in the mean scores. The significant values for all tests in Posttest 1 to Posttest 2 are also greater than α at .05 level of significance and this suggests there is no significant difference in the mean scores.

4.6 **Overview of Improvements**

Figure 4.1 summarises the improvements in reading fluency and spelling ability of the experimental and the control groups from pretest to posttests. It also shows the retention of the phonics skills, by comparing the mean scores from Posttest 1 to Posttest 2. Overall, both phonics groups performed statistically better in all tests after eight weeks of phonics training in reading and spelling. Although both groups recorded a lower score in the three-week lapse second posttest for PLST, FSIT, RT and ORFT, there was no significant difference in the participants' performance. Both groups showed a slight improvement in ST from Posttest 1 to Posttest 2. However, there is again no significant difference. The Charts A to E in Figure 4.1 also shows that the participants' in the experimental group outperformed the control group in all five tests. Specifically, these results suggest that the experimental group's systematic synthetic phonics had an advantage over the control group's KSSR phonics in reading fluency and spelling ability.



Figure 4.1: Improvements in reading fluency and spelling ability of both groups

4.7 Summary

This chapter has presented the results from the analyses of one pretest and two posttests. From the results, both the experimental group and control group's improvement in reading fluency and spelling ability are significant. Nonetheless, the hypothesis confirmed that the experimental group had a significant gain over the control group. Results from the second posttest have also shown the retention of the phonics skills for reading and spelling.

CHAPTER 5: DISCUSSION

5.1 Introduction

This chapter will provide a summary of the results, interpretation of the results and discussion of the implications. It also addresses the limitations and lists the recommendation for future research.

5.2 Summary of the Results

To confirm the hypothesis and answer the research questions, data gathered from the independent variable (types of phonics training) and dependent variables (assessment scores) were analysed with a paired-samples t-test, one-way ANOVA and multiple comparisons of time for both groups and, one-way ANOVA and multiple comparisons of time by groups. There were three sets of assessment scores gathered from the pretest, immediate posttest and 3-week lapse posttest. SPSS version 21 was utilised to compute the effects of the independent variable at the specified significance level .05 alpha.

Findings from this study show that synthetic phonics instruction, whether systematic or unsystematic (KSSR Phonics), helps children to develop their decoding skills which apply in reading regular or phonetically decodable words. Children from the experimental and control groups recorded a significant growth in their decoding ability (assessed through the RT, ST and ORFT). This indicates that both approaches are beneficial in building their decoding skills that had contributed to their improvement in beginning reading. The effectiveness can be seen in the results of the paired-samples t-test for both experimental and control groups using the pretest and immediate posttest scores. This also suggests that the children are able to apply the blending and segmenting skills (two components of synthetic phonics) in their reading and spelling.

To determine that the retention of the phonics skills for early literacy, scores from the pretest, immediate posttest and 3-week lapse posttest were analysed using a one-way ANOVA. The results show that the growth and improvement in children's reading fluency and spelling ability lasted beyond training. This finding supports Ehri, Nunes, Stahl and Willows (2001) and de Graaff, Bosman, Hasselman and Verhoeven's (2009) studies on systematic phonics; Bear's (1959, 1964) and Johnston, McGeown and Watson's (2011) studies on synthetic phonics and; Snider's (1997) work on the importance of developing phonemic awareness. Comparison of scores between the pretest to immediate posttest and pretest to 3-week lapse posttest similarly show that there was a significant difference. This suggests that the children were able to retain the decoding skills, and therefore they performed equally well in the three-week-later assessment. However, there was no significant difference in the scores between immediate posttest and 3-week lapse posttest. This implies that the children did not regress in their reading and spelling ability over time.

The hypothesis which states children of the experimental group (systematic synthetic phonics) will attain higher levels of reading fluency and spelling ability than the control group (KSSR phonics) was also confirmed in the one-way ANOVA and multiple comparisons by groups. The results showed that the experimental group, who underwent phases of training, demonstrated a significantly larger gain in their ability to read and spell at word level. However, no significant difference was demonstrated in reading at sentence level. At pretest, before the intervention was carried out, children in the control group had scored a slightly higher mean scores in all five assessments compared to the experimental. However, despite the initial advantage, the experimental group surpassed the control group in their decoding and spelling ability. The same advantage is recorded in the 3-week lapse posttest, in which the experimental group's improvement in reading and spelling at word level outperformed the control group's.

2. On the whole, the positive findings of this study confirmed the effectiveness of SSP in aiding children's attainment of reading fluency and spelling ability.

5.3 Conclusions

5.3.1 Interpretation of Results

Although both experimental and control groups made good progress in their reading fluency and spelling ability, the experimental group had higher levels of attainment as compared to the control group in productive letter-sound knowledge, phonemic awareness, reading at world level and spelling. The experimental group achieved similar level in passage reading with the control group. The following section presents an interpretation of the results in relation to the systematicity of the systematic synthetic phonics training. The interpretation is in connection with several studies in phonics and early literacy, theoretical background and models of reading. The related studies, theories and models of reading have been discussed at length in Chapter 2 – Literature Review.

In systematic synthetic phonics instruction (SSPI), phonics training comes after the letter-sound training. The superior performance of the systematic synthetic phonics group is attributed to the four strategies, and each two supported reading and spelling. The reading-supporting strategies are presented in the productive letter-sound training (from grapheme to phoneme), Phases 5 (from written word to oral form) and the afterphase 'blending' session of the phonics training. The spelling-supporting strategies involved the receptive letter-sound training (from phoneme to grapheme), Phases 1 through 5 (from oral form to written word) and the after-phase 'segmenting' activities of the phonics training. The success also lies in the implementation of phases and stages. Children were only allowed to progress to the next phase after completing the current phase and, only promoted to the next stage after mastering the 5 phases, blending and segmenting sessions in each stage. In the KSSR phonics, the learning of new phonemes followed a repetitive-routine. Children were firstly introduced to the target phonemes, engaged in continuous say-aloud practice, identifying medial sound from a whole-word, with brief blending and segmenting sessions. Phonics training ends with a reading text that incorporated the words learned. In each unit, two new phonemes are introduced, with no reference or revision or application of the past phoneme learned.

5.3.2 Confirming Past Studies

The findings of this present study support Snider (1997), who suggested that kindergarteners who could not complete phonemic segmentation and manipulation tasks were at risk for learning and reading disabilities. Snider worked on the importance of phonemic awareness, suggesting that it is a causal relationship between phonemic awareness and beginning reading. Phonemic awareness training was evident in the productive and receptive letter-sound training, blending and phoneme segmentation tasks in SSPI, raising the conscious awareness in children that words are made up of phonemes. Learning grapheme-phoneme relationships help them to associate letters to their sounds.

Ehri, Nunes, Stahl and Willows' (2001) meta-analysis on type of phonics instructions helps popularised systematic phonics. They confirmed the lasting effects of systematic phonics well beyond training. They also found that children who were introduced and taught reading using the systematic phonics in the early grades performed better in reading than those who started reading with other methods. To ascertain the effectiveness of systematic phonics, Ehri et al. recommended a further research with English as Second Language (L2) learners who are at their beginning stage of learning reading. This study undertook the recommendation with a group of L2 learners who live in the rural parts of Sarawak and achieved similar results. This can be

seen in the experimental group children's higher levels of attainment in reading fluency and spelling ability than the control group children.

The findings of this study are also consistent with the work conducted by de Graaff, Bosman, Hasselman and Verhoeven (2009) who concluded systematic-phonics training makes it easier for beginning readers to comprehend and acquire the decoding skills. To achieve this, de Graaff's study put in place a reduced set of overlapping words consisting of a few letters. Similar strategies were also taken in this present study. The introduction to new vowel sounds and their prints (grapheme-phoneme correspondences or GPCs) were done in stages. In the beginning in Stage A, children only practised with 5 GPCS. In each stage too, there were 5 planned phases. After successfully completing all the 5 phases in each stage, children progressed to the next stage with 3 new added GPCs. This gradual introduction of GPCs in each stage continued until all 16 GPCs were introduced (Appendix P). Through this manner, the experimental group children experienced reading through a constant and comprehensible practice of decoding skills. Children were not overwhelmed, as the exposure to the amount of words was gradual, and repeated.

The findings of this study that are in line with other studies (Snider, 1997; Ehri et al, 2001; de Graaff et al., 2009) help to contribute to the existing literature on systematic synthetic phonics and L2 learners' early literacy. The present study is different in the participants who comprised of the rural children of the indigenous tribe (*Iban*).
5.3.3 Implications from Findings

5.3.3.1 Theoretical Implications

Discussing from the theoretical perspective, findings on systematic synthetic phonics from this study complement the interactionist theory. The interactionist theory in second language acquisition incorporates aspects of both behaviourism and nativism. Interactionist theorists argue that both are equally necessary for the child to develop language and both must work together (Cook, 1985 cited in van der Walt, 1991). The following section discusses how systematic synthetic phonics incorporates aspects of both nativism and behaviourism.

The nativist theory proposed by Noam Chomsky in the year 1965 inspired Krashen's (1977, 1981, 1982, 1985) Monitor Theory (Escamilla & Grassi, 2005). The Input Hypothesis in Krashen's Monitor Theory posits that children need comprehensible input to activate the LAD and begin the acquisition of a second language. In this study, input becomes comprehensible when pictorial clues that contain things that have the vowel sounds in the medial positions were incorporated in the early stage of training and as the children progressed, the pictures were gradually removed, leaving them with just the graphemes. Learners were presented with visuals to aid comprehension after successfully blending phonemes to form complete words in a reading lesson. The Jolly Phonics materials engaged in this study also apply the principle of Input Hypothesis "i+1". "i+1" refers to comprehensible input that needs to be slightly more advanced than children's current level for them to progress in the language (Escamilla & Grassi, 2005). In this study, "i+1" takes place when children continuously blend words with a larger bank of graphemes.

On the other hand, Skinner's (1957) behaviourist theory stresses on the importance of imitation. In the same manner, imitation provides learners with stimuli that encourage productive and appropriate responses. In the systematic synthetic

phonics training, the word and spelling lists were the given stimulus and children responded appropriately by decoding the text using the synthetic phonics skills. The reward comes in the form of their reading achievement. Notably, the two important characteristics of learners in this theory are; (i) learners have the ability to respond to stimuli, and (ii) learners are able to intuitively evaluate the reward gained from productive responses.

The interactionist theory discussed above also confirms the models of reading that make up the structures of the systematic synthetic phonics program. Rose's (2006) *Simple View of Reading* is an adaptation of Gough and Tunmer's (1986) 'simple-view' that differentiates word recognition and language comprehension processes in reading. SSP program in this study agrees with Pearson (2000), who asserts that synthetic phonics adapts wholeheartedly this simple view of reading, in which Rose recommends "phonics first and fast". Children begin by learning all grapheme-phoneme correspondences "at a fairly brisk pace" and blending is advocated as the means of decoding (Hepplewhite, 2005; Rose, 2006). The concept of 'fluent' reading can be defined as that which enables learners to understand the meaning of the text without being hindered by the lack of efficient decoding skills (Purewal, 2008). To overcome the inefficiency of decoding skills, children's decoding ability is continuously developed until they gain automaticity in the SSP training.

Van der Walt (1991) states that the theories of SLA must be related to the learning-teaching of second languages. Van der Walt has also highlighted the issue of no direct link between SLA research and language learning. Thus, the discussion on theoretical implications in this study helps to link theories of SLA to second language learning practices and vice versa.

5.3.3.2 Pedagogical Implications

In the context of this study, it has been observed that KSSR phonics presents no continuation. The children in rural areas do not employ the phonics skills in reading and spelling, preferring instead to wild-pronunciation guesses (and often incorrectly). This issue of no continuation was confirmed by KSSR-phonics teachers servicing in nearby rural and town schools via surveys and interviews (Appendix C). While the Ministry of Education aims to address the low level of literacy in primary national schools by implementing the strategies of phonics to develop phonemic awareness so as to produce independent readers, there is a huge gap between the planned and the reality. The reality refers to the KSSR phonics-trained children not using the phonics strategies to read.

Systematic synthetic phonics (SSP) helps to bridge the gaps by favouring "phonics first and fast". The teaching of sight words and High Frequency Words (HFW) may ensue after children have acquired the basic decoding ability (Rose, 2006). The highly systematic strategies prescribed in SSP can provide a methodological sequence of introducing the synthetic phonics skills and letter sounds training. Children felt a sense of achievement when they successfully read storybooks independently (Jolly Readers Level 1 and Level 2 have been given for independent reading after the training). Using the blending and segmenting strategies, SSP presents children with the skills to be able to read independently. This can be achieved despite the children's language-disadvantaged background and, poor second language experience brought along to the classroom. The method thus encourages language learning among children and enhances learner centeredness.

Teachers, from various districts, that are currently servicing in rural schools were introduced to SSP in an English Literacy Course in May 2013. The researcher conducted a live demonstration on how SSP may help children acquire early reading fluency and spelling ability. The sessions yielded positive responses from the teachers. The effectiveness and systematicity of the SSP program give them a clear picture of how systematic phonics training in classrooms can benefit learners greatly. SSP could be the answer to other ELLT practices for indigenous children from other rural areas in Sarawak to gain similar improvements in their early literacy in English. As discussed in Chapter 1, the question no longer lingers on the need to integrate phonics but rather using the most effective phonics instructions to develop early literacy skills among young learners. Findings from this study agree that SSP instruction is the answer, as it can be integrated to supplement the current phonics curriculum in Malaysian primary schools.

5.4 Summary

This study has examined the application of the phonics method in improving young children's reading fluency and spelling ability. As discussed previously, reading consists of two components; (i) word-recognition process and (ii) comprehension process. Phonics instruction helps to develop children's decoding ability. Mastering the decoding skills enhances children's word-recognition and improves their overall early literacy. Additionally, the empirical evidences gathered in the current study confirm the success of similar projects using synthetic phonics (Jolly Phonics) to teach reading in Pulau Mantannani, Sabah. In line with the government's effort and national interest to increase literacy rate, the results in this study imply the importance of having a planned and consistent phonics instruction for reading. Most importantly, it is recommended to have a planned and systematic synthetic phonics course and syllabus to teachers in the primary schools, particularly those servicing in rural schools who face challenges in developing their pupils' early literacy in the English Language.

5.5 Limitations

There is little research found on systematic synthetic phonics with rural children, who are English Language learners (ELL). No standardised assessments were found, and thus the four measures (PLST, FSIT, RT, ST) were replicated from de Graaff, Bosman, Hasselman and Verhoeven (2009). Their study used only 10 GPCs, comprising of short vowel sounds and single consonants, for the Dutch language. Although the structures of the tests remained the same, with just changes made in the word lists, the tests were subjected to pilot tests and appropriate revisions were made. The ORFT text that contained decodable words was taken directly from Jolly Phonics, the materials used in the SSP training. Further test-retest reliability check was carried out with 8 non-participating children, in which they underwent the tests twice, with the first and second taking place 2 weeks apart. This was done to increase the likelihood of making them good assessment measures.

Another limitation of this study was that there were only two teachers involved, one the researcher herself and another phonics-trained teacher. Each was responsible for a group; the researcher with the experimental group and the teacher with the control group. With only one teacher for each group, it was difficult to determine if there were interaction effects between the teacher and the phonics instructions used. In other words, it is possible that the teacher of the experimental group was suited to teach systematic synthetic phonics, while the other teacher was more suited to teach KSSR phonics. Replications of this study should include additional teachers and classrooms in each group and explore the interaction effects of teacher with the SSP instruction.

Another limitation is the small sample size of 32, 16 in the experimental group and 16 in the control group, from three neighbouring schools. Although randomised control trial (RCT) was used in placing them in the two training conditions, multiple testing across time was conducted to test the consistency, and the results of the study revealed a medium-sized effects, small sample size makes generalising tentative without replication. Replication with more students across more rural schools will improve the generalisability of these results. Furthermore, of the 44 phonemes in the English Language, only 11 phonemes represented by 16 graphemes (making it a total of 16 GPCs) were included in the study. A replication of SSP training with all the 44 phonemes with a larger sample size would help to determine the full effects of the intervention in developing early reading fluency and spelling ability with the children of the native tribe from the rural parts of Malaysia, where English is foreign and learned without a language-supporting environment and prior knowledge.

5.6 Recommendations for Future Research

There are several ways in which future studies can better investigate some of the several areas examined in this present study. Firstly, as an improvement, future studies can be repeated for a longer period of time, possibly for the entire school year and begin phonics training of all the 44 phonemes at the beginning of the school term. Doing so may provide a better idea so as to see whether a complete SSP program helps rural children develop early reading fluency and spelling ability, and if the intervention helps in their overall acquisition of literacy skills in the English Language. Similar intervention with another cohort of children (using the same trainers) may also help to determine the effects of SSP instruction. More teachers can be trained to uptake the SSP training, and a synchronized KSSR phonics training to better determine the difference in the effectiveness of the two phonics programs.

Another consideration for future research is to increase the sample size for the study, possibly by extending the intervention to other rural schools in Malaysia. Doing so will enable the researcher to collect and analyze more data across more settings and schools, and enhance the generalizability of SSP in developing early literacy. At the end of the 3-week lapse posttest, although SSP group recorded a higher improvement in oral

reading fluency at sentence-level, no significant difference have been determined between the SSP and KSSR phonics groups. It is therefore recommended ORFT be carried out untimed, and consider their word recognition ability by calculating the number of words read correctly in the entire text. The study also focuses on word recognition only, and thus has yet to study on the effects of SSP on comprehension. It is therefore recommended future research to explore this area by incorporating the assessments on complete reading processes; both the word recognition and comprehension.

Next, it is also worth exploring if there is any significant difference in the reading acquisition rate using SSP between boys and girls, as gender had not been a variable, despite having a proportionate number of boys and girls in this study. Finally, a future longitudinal study following the children who participated in this study, it is recommended that the study should continue to monitor and assess the effectiveness of SSP versus KSSR phonics. Further analysis needs to be conducted on continuous data collection to determine the long-term effects and retention of the phonics skills for reading.

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Appendix A: Newspaper Report – Pulau Mantanani Phonics Project

Pulau Mantanani's Children Learn English Through Phonics

By Kristy Inus

KOTA BELUD, May 13 (Bernama) -- The children of the Ubian community in Pulau Mantanani, located an hour boat ride from the mainland of Kota Belud, have hardly seen the outside world.

Their isolation is made worse by the limited electricity supply and the lack of communication and television channels. Therefore they are strangers to many things, including the English language.

Which is why when a Universiti Malaysia Sabah (UMS) team came down to teach English using the phonics approach, the instructors were not very hopeful of the outcome.

However, much to their surprise, by the end of the six-month project they found that lower primary pupils had made significant improvements.

From hardly being able to pronounce anything in English, they managed to grasp the 30 pronunciation types taught to them.

Phonics helps students connect sounds in spoken English with letters or group of letters and to pronounce unknown words.

More importantly, the team, headed by UMS Head of TESL (Teaching English as a Second Language) Programme Dr Lee Kean Wah, discovered something more remarkable.

The children were enthusiastic to learn English through the phonics approach, even though the language is alien to them.

INAUGURAL ENGLISH LITERACY PROJECT

Dr Lee said that though UMS had previously initiated projects on the island, this was the first one concerning teaching and learning English.

It was also the first project funded by the private sector, namely CIMB Foundation, and the approach is mandated under the Primary School Standard Curriculum or KSSR, which took effect this year.

"The phonics approach was meant to be supplementary to the existing one, known as the 'look and say' method, where students learn the first word as a whole."

"It's very good with visual learners, but it is not going to work with students who are not visual," he told Bernama.

HOW IT STARTED

Dr Lee said that the purpose of the programme was to improve the level of English among rural students, and they decided that the best way to do this is to start from the bottom.

He said the project was organised under the School Unit for Rural Education Research with the target being mainly grade one to primary three pupils.

The programme also offers TESL undergraduates the opportunity to apply what they learned in

the classroom and to see for themselves the realities of teaching English to rural students.

"As most of my students are from Sabah and Sarawak, they are used to rural conditions. The programme provides them the opportunity to serve their own community," he added.

He said that their sponsor had given them an allocation of RM42,800 for the project, which will be implemented within half a year period with the money being handed over in January.

"Of course, to be honest, we could use more funding since the transportation costs are very high and the material, Jolly Phonics, was sourced from the Peninsula," he explained.

The project saw the researchers returning to Pulau Mantanani a number of times to record the progress of the target pupils. They conducted a one-week period for intensive teaching, learning and analysing of the results of the target group.

There were 94 pupils from SK Mantanani involved in the project; 27 were from preschool, 27 were from Primary One, 16 were from Primary Two while 24 were in Primary Three. Eight UMS TESL undergraduates acted as their teachers.

PUPILS' INTEREST NOT AN ISSUE

"The pupils have performed beyond my expectations, I didn't expect such an impact on these students. I'm really amazed about the fact that within a few days of intensive guidance, the students performed so well."

"However, due to time constraints, we only managed to introduce 30 out of the 42 sounds in English. But in terms of their attitude, they were so enthusiastic. When we first came in January, they were not able to read in English. We did a diagnostic test on them, which mostly came out as zero."

"Motivation wise, they are willing to learn. That made my team more confident, and we would like to try it out in other rural schools," added Dr. Lee.

He said that the university is in the process of negotiating with CIMB Bank for further financial support to introduce the programme in other remote parts of Sabah as well.

He noted that two of the areas they have identified as in need of such educational assistance are the Pitas and Kinabatangan districts.

Many English teachers may also not be aware of how to teach using the phonics approach, since it is a new approach through KSSR.

"That is why when we continue the project in other schools, I will also need to focus on the school teachers. Therefore, I would like to try out TOT (training of trainers) during upcoming programmes," said Dr. Lee.

-- BERNAMA

Appendix B: Scholastic's Phonics Materials



Appendix C: Survey on KSSR Phonics

A Survey of the Continuation of KSSR Phonics

Dear English Teachers:

This is a simple survey to determine how effective the KSSR Phonics strategies for reading has been after two years of implementation. The information gathered will contribute to the researcher's knowledge of the continuation KSSR Phonics. All information will be kept strictly confidential, and will only be used with for academic purposes. Your assistance in answering these questions is greatly appreciated. Should you have any enquiries, please contact the researcher at 012-9265518.

Thank You.

Personal Details

Gender:
Age:
Educational Qualifications: SPM / Diploma / Degree
Teaching Options: Major/ Minor/
Number of years teaching English:
Number of years teaching KSSR phonics:
Contact Number:

1. Tick ' $\sqrt{}$ ' box that applies

	Less than Once	Once	Twice	More than Twice
How often do you implement the phonics strategies in your reading and writing lessons in a week now?				

2. Circle the corresponding number.

	Strongly Agree	Agree	Disagree	Strongly Disagree
Reading				
My pupils like reading.	4	3	2	1
My pupils need help to read.	4	3	2	1
My pupils like teachers to read to them.	4	3	2	1
My pupils read without stopping.	4	3	2	1
My pupils read English books other than schoolbooks.	4	3	2	1
My pupils are confident readers.	4	3	2	1

Writing				
My pupils write with confidence.	4	3	2	1
My pupils enjoy writing.	4	3	2	1
My pupils need help to spell.	4	3	2	1
My pupils are good spellers.	4	3	2	1
After 2 years of implementing KSSR phonic	s:			
My pupils can remember all the phonemes (letter-sounds) taught to them in Primary 1 and Primary 2.	4	3	2	1
My pupils use the phonics strategy to read.	4	3	2	1
My pupils use the phonics strategy to spell.	4	3	2	1
My pupils have achieved basic letter sound recognition.	4	3	2	1
My pupils are able to read CVC words.	4	3	2	1
My pupils are able to read decodable texts.	4	3	2	1
My pupils are independent and fluent readers.	4	3	2	1
KSSR Phonics has elevated my pupils' reading performance.	4	3	2	1
After 2 years of KSSR phonics, the program	still:			
contains opportunities for children to practice. reading texts containing a high proportion of words that conform to taught sound-letter relationships.	4	3	2	1
provides pupils with opportunities to practise reading using the phonemes learnt.	4	3	2	1
includes opportunities for pupils to continuously use phonics strategies for reading.	4	3	2	1
encourages pupils to use the phonics strategies for reading.	4	3	2	1
gives pupils a variety of opportunities to re- read decodable CVC words and texts.	4	3	2	1

Appendix D1: Consent from State Education Office



JABATAN PELAJARAN NEGERI SARAWAK BANGUNAN TUN DATUK PATINGGI TUANKU HAJI BUJANG JALAN SIMPANG TIGA 93604 KUCHING SARAWAK

Telefon: 082-243201 FAX: 082-246750 Kawat: PENDIDIKAN

Ruj Kami : JPS(W)/SK2P/(Lat)153/08/02/05/Jld.5 (8) Tarikh : 11 Januari 2013

Yap Jia Rong

SK Sungai Silas, D/A Pejabat Pelajaran Daerah Bintulu, 97000 Bintulu.

Tuan,

KEBENARAN UNTUK MENJALANKAN KAJIAN DI SEKOLAH-SEKOLAH, INSTITUT-INSTITUT PERGURUAN, JABATAN-JABATAN PELAJARAN DAN BAHAGIAN-BAHAGIAN DI BAWAH KEMENTERIAN PELAJARAN MALAYSIA

Dengan hormatnya saya diarah merujuk kepada perkara di atas.

2. Sukacita dimaklumkan bahawa pada dasarnya Jabatan Pelajaran Negeri Sarawak tiada sebarang halangan untuk membenarkan tuan menjalankan kajian bertajuk :

"Systematic Synthetic Phonics for Early Literacy among the Rural Native Children of Sarawak"

3. Tuan diingatkan bahawa sepanjang tempoh kajian tersebut, tuan adalah tertakluk kepada peraturan yang sedang berkuatkuasa dan menjalankan kajian seperti tajuk yang diluluskan oleh Bahagian Perancangan dan Penyelidikan Dasar Pendidikan, Kementerian Pelajaran Malaysia bil. KP(BPPDP)603/5/JLD.02(25) bertarikh 17.02.2011.

4. Jabatan ini memohon agar sesalinan laporan kajian dihantar ke Unit Latihan Dan Kemajuan Staf, Jabatan Pelajaran Negeri Sarawak sebaik sahaja selesai untuk tujuan rekod dan rujukan jabatan. Dengan surat ini, pegawai berkenaan adalah dimohon untuk memberi bantuan dan kerjasama yang sewajarnya bagi menjayakan kajian tersebut.

Sekian, terima kasih.

"BERKHIDMAT UNTUK NEGARA"

Saya yang menurut perintah,

[KUSWADY BIN CHIL]
Sektor Khidmat Pengurusan Dan Pembangunan b.p Pengarah Pelajaran Sarawak.

Appendix D2: Informed Consent Form for Participants

Please read the following information carefully. You can also request a copy for future reference.

Experiment:	Systematic Synthetic Phonics for Early Literacy among Rural Native Children in Sarawak
Experimenter:	Yap Jia Rong
Affiliation:	Faculty of Languages and Linguistics, University of Malaya

Purpose:

The purpose of this study is to examine the effects of systematic synthetic phonics and KSSR phonics on children's early literacy (defined as reading fluency and spelling ability). The study is part of dissertation in second language learning, under the supervision of Assc. Professor Dr. Kuang Ching Hei.

Procedure:

If you agree to be in this study, you will be asked to do the following:

- 1. Participate in 40 sessions of phonics-instruction training (30 minutes per session).
- 2. Undergo tests that measure your reading fluency and spelling ability (PLST, FSIT, RT, ST, ORFT) at the beginning of the study, immediately after the training, and 3 weeks after the training.

The total time required to complete the study should be approximately 8 weeks. Training will be carried out during school days, after schooling hours. You will receive storybooks and goodie bag for your participation.

Benefits to Participant:

Participants will learn/acquire the strategies for reading and spelling and will help contribute to the body of knowledge in language learning.

Voluntary Nature of the Study/Confidentiality:

Your participation in this study is entirely voluntary and you may refuse to complete the study at any point during the experiment, or refuse to undergo the reading/spelling assessments should you are uncomfortable. You may also stop at any time and ask the researcher any questions you may have. Your name will never be connected to your results; instead, a number will be used for identification purposes. Information that would make it possible to identify you or any other participant will never be included in any sort of report. The data will be accessible only to those working on the project.

Contacts and Questions:

At this time you may ask any questions you may have regarding this study. If you have questions later, you may contact Yap Jia Rong at 012-9265518 or jiarongyap@siswa.um.edu.my, or her faculty supervisor, Assc. Prof. Dr. Kuang Ching Hei at kuangch@um.edu.my.

Statement of Consent:

I have read the above information. I have asked any questions I had regarding the experimental procedure and they have been answered to my satisfaction. I consent my child to participate in this study.

Date:	
Name of Parent/Guardian:	
Date:	

Signature of Parent/Guardian:

Thanks for your participation!

Appendix D3: Informed Consent Form for Participants (BM Version)

Sila baca maklumat yang berikut dengan teliti. Anda juga boleh meminta satu salinan untuk rujukan masa depan.

Eksperimen:	Sistematik Phonics sintetik untuk Literasi Awal Kanak-kanak Asli di luar bandar di Sarawak
Kajian oleh	: Yap Jia Rong
Affiliation	: Fakulti Bahasa dan Linguistik, Universiti Malaya

Tujuan:

Tujuan kajian ini adalah untuk mengkaji kesan fonik sintetik sistematik dan fonik KSSR pada literasi awal kanak-kanak (ditakrifkan sebagai kefasihan membaca dan keupayaan ejaan). Kajian ini adalah sebahagian daripada disertasi dalam pembelajaran bahasa kedua, di bawah pengawasan Profesor Madya Dr Kuang Ching Hei.

Prosedur:

Jika anda bersetuju untuk menyertai kajian ini, anda akan diminta untuk melakukan perkara berikut:

- 1. Mengambil bahagian dalam 40 sesi latihan fonik-arahan (30 minit setiap sesi).
- 2. Menjalani ujian yang mengukur kefasihan membaca dan keupayaan ejaan (PLST, FSIT, RT, ST, ORFT) pada awal kajian ini, dengan serta-merta selepas latihan, dan 3 minggu selepas latihan.

Jumlah masa yang diperlukan untuk menamatkan pengajian perlu kira-kira 8 minggu. Latihan akan dijalankan semasa hari sekolah, selepas bersekolah jam. Anda akan menerima buku cerita dan beg cenderahati untuk penyertaan anda.

Manfaat kepada Peserta:

Peserta akan belajar / memperoleh strategi untuk membaca dan ejaan dan akan membantu menyumbang kepada badan pengetahuan dalam pembelajaran bahasa.

Hak Anda Sebagai Sukarelawan:

Penyertaan anda di dalam kajian ini adalah secara sukarela dan anda boleh menolak untuk menamatkan pengajian pada bila-bila semasa eksperimen, atau enggan untuk menjalani penilaian membaca / ejaan anda perlu tidak selesa. Anda juga boleh berhenti pada bila-bila dan meminta penyelidik itu apa-apa soalan yang anda ada. Nama anda tidak akan disambungkan kepada keputusan anda; sebaliknya, sebilangan akan digunakan untuk tujuan pengenalan. Maklumat yang akan membuat ia mungkin untuk mengenal pasti anda atau mana-mana peserta lain tidak akan dimasukkan ke dalam mana-mana jenis laporan. Data ini boleh diakses hanya untuk mereka yang bekerja dalam projek ini.

Hubungan dan Pertanyaan:

Pada masa ini anda boleh meminta apa-apa soalan yang ada mengenai kajian ini atau jika anda mempunyai soalan kemudian, anda boleh menghubungi Yap Jia Rong di 012-9265518 atau jiarongyap@siswa.um.edu.my, atau penyelia fakulti beliau, Prof Madya Dr Kuang Ching Hei di kuangch@um.edu.my.

Penyata Persetujuan:

Saya telah membaca maklumat di atas. Saya telah ditanya apa-apa soalan saya mengenai prosedur eksperimen dan mereka telah dijawab dengan memuaskan. Saya membenarkan anak saya untuk mengambil bahagian dalam kajian ini.

Nama Peserta:	
Carikh:	
Nama Ibu Bapa / Penjaga:	
Гагікh:	

Tandatangan Ibu bapa / Penjaga:

Terima kasih atas penyertaan anda!

Appendix E1: KSSR Synthetic Phonics Program

Content and Learning Standards (Years 1 and 2 - Reading)

CONTENT STANDARD	LEARNING STANDARDS Year One 2.1.1 Able to identify and distinguish the shapes of the letters in the alphabet. 2.1.2 Able to recognise and articulate initial, medial and the final sounds in single syllable words within given context:							LEA	RNING Yea	STAN ar Two	DARD	S
2.1 By the end of the 6-year primary schooling, pupils will be able to apply knowledge of sounds of letters to recognise words in linear and non-linear texts.							2.1.1 Able to recognise and articulate initial, medial and the final sounds in single syllable words within giver context:					
							initial, medial and the final sounds in single syllable words within given context:		medial and the final sounds le syllable words within given		(a)	/e ɪ / (ai)
	(a)	/s/ (s)	/æ/ (a)	/t/ (t)	p/ (p)		(b)	/ɑ:/ (ar)	/ɔ:/ (or)	/3:/ (ur)	/əʊ/ (ow)	/JI/ (io)
	(D)	/1/ (i)	/n/ (n)	/m/ (m)	/d/ (d)		(c)	/Iə/ (ear)	/eə/ (air)	/ʊə/ (ure)	/3:/ (er)	
	(d)	(g) /k/	(0) /e/	(c)	(k) /r/ (r)		(d)	/е і / (ау)	/aʊ/ (ou)	/aI/ (ie)	/i:/ (ea)	
	(e)	(ck) /h/ (h)	(e) /b/ (b)	(u) /f/ (f,ff)	/l/ (I,II)	/s/ (ss)	(e)	/ɔI/ (oy)	/3:/ (ir)	/u:/ (ue)	/ɔ:/ (aw)	
	(f)	/d / (j)	/v/ (v)	/w/ (w)	/ks/ /gz/ (x)		(f)	/w/ (wh)	/f/ (ph)	/ju:/ (ew)	/əʊ/ (oe)	/ɔ:/ (au)
	(g)	/j/ (y)	/z/ (z,zz)	/kw/ (qu)			(g)	/e ɪ / (a-	/i:/ (e-e)	/aɪ/ (i-e)	/әʊ/ (о-е)	/u:/ (u-e)
	(h)	/t∫/ (ch)	/∫/ (sh)	/θ/ /ð/ (th)	/ŋ/ (ng)			e)		. ,		

CONTENT STANDARD	LEARNING STANDARDS Year One	LEARNING STANDARDS Year Two
2.1 By the end of the 6-year primary schooling, pupils will be able to apply knowledge of sounds of letters to recognise words in linear and non-linear texts.	2.1.3 Able to blend two to four phonemes into recognizable words and read them aloud.2.1.4 Able to segment words into phonemes to spell.	2.1.2 Able to blend phonemes into recognizable words and read them aloud.2.1.3 Able to segment words into phonemes to spell.
2.2 By the end of the 6-year primary schooling, pupils will be able to demonstrate understanding of a variety of linear and non-linear texts in the form of print and non-print materials using a range of strategies to construct meaning.	 2.2.1 Able to read and apply word recognition and word attack skills by matching words with: a) graphics b) spoken words 2.2.2 Able to read and understand phrases in linear and non-linear texts. 2.2.3 Able to read and understand sentences (3-5 words) in linear and non-linear texts with guidance. 2.2.4 Able to read a paragraph of 3-5 simple sentences. 2.2.5 Able to apply basic dictionary skills using picture dictionaries. 	 2.2.1 Able to read and apply word recognition and word attack skills by: a) matching words with spoken words. b) reading and grouping words according to word families. 2.2.2 Able to read and understand phrases in linear and non-linear texts. 2.2.3 Able to read and understand simple sentences in linear and non-linear texts. 2.2.4 Able to read and understand a paragraph of 5-8 simple sentences. 2.2.5 Able to apply basic dictionary skills using picture dictionaries

Pusat Pembangunan Kurikulum (2010)

Appendix E2: Guidelines For Examining Phonics Programs

Checklist 2: Program Evaluation Criteria

Record the number that best reflects the program's instruction for each of the guidelines on the checklist.

Not Present 2		Pres 3	ent	Covered in Depth 4 5
Phonological and Phonemic Awareness	1	2	3	Comments
The program: provides activities that follow a sequence of instruction that progresses from easier to more difficult tasks and from larger to smaller units of spoken language.				
uses auditory and visual cues to help children understand how to identify, segment, and blend the sounds in spoken words.				
starts with continuous sounds that are easier to blend.				
advises teachers to stretch out and connect (or "sing") the sounds rather than separate them.				
includes activities to teach the relationships of letters to sounds in more advanced phonemic awareness tasks.				
Decoding	1	2	3	Comments
The program: provides children with opportunities to use their knowledge of sound-letter relationships to practice decoding.				
helps children use context to confirm the meanings of words they have identified by applying their knowledge of sound- letter relationships.				
provides children with structural analysis practice as a way to identify word parts and multisyllabic words.				
Irregular/High-Frequency Words	1	2	3	Comments
The program: introduces a set of irregular words in a reasonable order and cummulatively reviews them.				
introduces a set of regular high frequency words in a reasonable order and cumulatively reviews them.				
provides opportunities for children to see and become familiar with a set of irregular high-frequency words through the use of rebus books.				

Alphabetic Principle	1	2	3	Comments
Plan of Instruction The program:				
teaches letter-sound relationships explicitly and in isolation.				
provides opportunities for children to practice letter-sound relationships in daily lessons.				
provides practice opportunities that include new sound-letter relationships, as well as cumulatively reviews of previously taught relationships.				
gives children opportunities early and often to apply their expanding knowledge of sound-letter relationships to the reading of phonetically spelled words that are similar in meaning.				
Rate and Sequence of Instruction The program: recognizes that children learn sound- letter relationships at different rates.				
introduces sound-letter relationships at a reasonable pace, in a range from two to four letter-sound relationships a week.				
in general, teaches high-utility letter sound relationships early.				
introduces consonants and vowels in a sequence that permits the childrento read words quickly.				
avoids simultaneous introduction of auditorially or visually similar sound and letters				
introduces single consonant sounds and consonant blend/clusters in separate lessons.				
provides blending instructions with words that contain the letter-sound relationships that the children have learned				

Checklist 2: Program Evaluation Criteria

Record the number that best reflects the program's instruction for each of the guidelines on the checklist.

Not Present 2		Present 3		Covered in Depth 4 5
Speling and Writing	1	2	3	Comments
The program: contains activities that coordinate spelling instruction with instruction in sound-letter relationships and decoding strategies.				
guides children to move from their own invented spellings to correct spellings.				
includes instruction that helps children to attend to spelling patterns in written words.				
introduces systematic, organized spelling lessons later in the program.				
permits children to respond in writing to what is read to them and to what they read, to express themselves creatively, and to communicate their ideas in writing.				
Reading Practice with Decodable Texts	1	2	3	Comments
The program: contains opportunities for children to practice reading texts containing a high proportion of words that conform to taught sound-letter relationships, particularly through the first stages of the program, and enough high- frequency/irregular and story words to make them sound natural.				
provides a sequence of texts, such that the letter-sound relationships the children have learned are cumulatively reviewed in the words of the texts.				
provides texts that are engaging, coherent, and comprehensive.				
provides opportunities for children to discuss what they read, so as to promote comprehension and reinforce the purpose of reading.				
gives children a variety of opportunities to re-read the text.				

Checklist 2: Program Evaluation Criteria

Record the number that best reflects the program's instruction for each of the guidelines on the checklist.

Not Present 1 2	Present 3		4	Covered in Depth <mark>5</mark>	
Reading Fluency	1	2	3	C	omments
The program: provides children with opportunities to read and re-read a range of stories and informational texts by, for example, reading on their own, partner reading, or choral reading.					
introduces new difficult words to children, and provides them with practice in reading these words before they read on their own.					
includes opportunities for children to hear a range of texts read fluently and with expression.					
suggests ideas for building home- school connections that encourage families to become involved actively in children's reading development.					
encourages periodic timing of children's oral reading and recording of information about individual children's reading rate and accuracy.					

(Texas Education Agency, 2002)

Appendix F: KSSR Assessment Results

Participants from School A

05/11/2013

SENARAI PRESTASI KUMULATIF MURID

Nama Sekolah Kod Sekolah	: SK : YBB
Tahun	: D2
Nama Kelas	:-
Mata Pelajaran	: BAHASA INGGERIS (SK)
Kemahiran	: BACAAN

Bil	No. MyKid/ No. Murid	Nama Murid	Prestasi Kumulatif
1	05080810xxxx		Band 2
2	05012113xxxx		Band 3
3	05082513xxxx		Band 2
4	05042413xxxx		Band 3
5	05121913xxxx		Band 3
6	05042213xxxx		Band 2
7	05091913xxxx		Band 1
8	05060913xxxx		Band 2
9	05120613xxxx		Band 2
10	05052913xxxx		Band 1
11	05082613xxxx		Band 2
12	05042713xxxx		Band 2

Tarikh Cetakan : 05/11/2013 11:11:58 AM

Participants from School B

02/11/2013

SENARAI PRESTASI KUMULATIF MURID

: SK
: YBB
: D2
:-
: BAHASA INGGERIS (SK)
: BACAAN

Bil	No. MyKid/ No. Murid	Nama Murid	Prestasi Kumulatif
1	05123013xxxx		Band 3
2	05042213xxxx		Band 3
3	05051213xxxx		Band 2
4	05040513xxxx		Band 1
5	05081713xxxx		Band 2
6	05121113xxxx		Band 2
7	05091413xxxx		Band 2
8	05091913xxxx		Band 2
9	05081713xxxx		Band 1
10	05102913xxxx		Band 2
11	05041810xxxx		Band 2
12	05032113xxxx		Band 2

Tarikh Cetakan : 02/11/2013 09:42:06 AM

Participants from School C

02/11/2013

SENARAI PRESTASI KUMULATIF MURID

Nama Sekolah	: SK
Kod Sekolah	: YBA
Tahun	: D2
Nama Kelas	:-
Mata Pelajaran	: BAHASA INGGERIS (SK)
Kemahiran	: BACAAN

Bil	No. MyKid/ No. Murid	Nama Murid	Prestasi Kumulatif
1	05120613xxxx		Band 1
2	05041913xxxx		Band 2
3	05091713xxxx		Band 2
4	05022613xxxx		Band 2
5	05083113xxxx		Band 3
6	05050913xxxx		Band 2
7	05122313xxxx		Band 2
8	05120613xxxx		Band 3

Tarikh Cetakan : 02/11/2013 15:32:36 AM
Appendix G1: English Language Background Questionnaire

English Language Background Questionnaire

Child's Name	:
NRIC No.	:
Parent/ Guard	ian's Name:

Dear Parent or Guardian:

This is a simple questionnaire to determine how well the child's family understands, speaks, reads and writes English. The information gathered will contribute to the researcher's knowledge of the child's English Language background. Your assistance in answering these questions is greatly appreciated.

Thai	nk You							
(Tick ' $$ ' boxes that apply)								
1.	What language(s) is spoken in the home?	🛛 English		Other				
2.	What language(s) is spoken most of the time to your children and family in the home?	□ English		Other				
3.	What language(s) is spoken most of the time to your neighbours?	🗆 English		Other				
4.	What language(s) does your family understand?	□ English		Other				
5.	What language(s) does your family speak?	🛛 English		Other				
6.	What language(s) does your family read?	🛛 English		Other				
7.	What language(s) does your family write?	🛛 English		Other				
8.	How well do you understand, speak, rea	nd and write Eng	glish?	2				
	Very w Understand English Speak English Read English Write English	ell Only a li □ □ □	ttle	Not at all				

Signature of Parent/ Guardian

Date

Appendix G2: English Language Background Questionnaire (BM version)

Soal Selidik Latar Belakang Bahasa Inggeris

Nama Anak	:
No. K/P	

Nama Ibubapa/ Penjaga:

Nama ibubapa/ r enjaga.

Para Ibubapa/ Penjaga yang dihormati:

Ini adalah satu soal selidik yang mudah untuk menentukan bagaimana keluarga kanakkanak itu memahami, bertutur, membaca dan menulis dalam Bahasa Inggeris. Maklumat yang dikumpulkan akan menyumbang kepada pengetahuan penyelidik latar belakang Bahasa Inggeris kanak-kanak. Bantuan anda untuk menjawab soalan-soalan ini adalah amat dihargai.

Sekian, terima kasih.

	(Tandakan '√' pada kotak yang berkenaan)							
1.	Apakah bahasa yang ditutu rumah?	n bahasa yang dituturkan di ?				Lain-Lain		
2.	Apakah bahasa yang ditutu kebanyakan masa kepada dan keluarga anda di ruma	urkan anak-anak h?		Bahasa Inggeris		Lain-Lain		
3.	Apakah bahasa yang dituti kepada jiran di rumah panj	urkan di ang anda?		Bahasa Inggeris		Lain-Lain		
4.	Apakah bahasa yang dima keluarga anda?	hami oleh		Bahasa Inggeris		Lain-Lain		
5.	Apakah bahasa yang dituti keluarga anda?	bahasa yang dituturi oleh a anda?				Lain-Lain		
6.	Apakah bahasa yang dibad keluarga anda?	i bahasa yang dibaca oleh a anda?				Lain-Lain		
7.	Apakah bahasa yang dituli keluarga anda?	kah bahasa yang ditulis oleh arga anda?				Lain-Lain		
8.	Sejauh manakah anda mer Bahasa Inggeris?	mahami, bertu	tur,	membaca	dan	menulis dalam		
	Memahami B.Inggeris Bertutur B.Inggeris Membaca B.Inggeris Menulis B.Inggeris	Sangat Baik	Se	edikit Saha	ja	Tidak sama sekali		
Tan	datangan Ibubapa/ Penjaga					Tarikh		

Appendix H: Achievement Test (Primary 1 30 GPCs)

Consonant Sounds

Say to the student: Look at these letters. Can you tell me the sound each letter makes? If the sound given is correct, do not mark the Record Form. If it is incorrect, write the sound the student gives above each letter. If no sound is given, circle the letter. If the student cannot say the sound for three or more consecutive letters, **say:** Look at all of the letters and tell me which sounds you do know.

Ь	С	d	f	9
h	j	k	I	m
n	р	q	r	S
†	v	w	×	У
z	ch	sh	th	wh

Short Vowel Sounds

Ask the student: Can you tell me the sounds of each letter? The student should name the short vowel sound.

		•		
^	0	1	0	
u	e		0	u

Scholastics Red (2002)

Appendix I: Samples of Phonics Instructions

1. Grapheme-Phoneme Correspondences

This is the letter 'g'. What is the sound for 'g'? That's correct. *(for correct answers)* That's incorrect. You may want to try again. *(for incorrect answers)* This is "ch" What is the sound for 'ch'? This is "u". What is the sound for "u"?

2. Blending Activity

I have these sound cards in front of me. Can you pick out "/ch/", "/u/" and "/ck/"? That's right. Now, put all these sounds together. What word would you get? Let's try another one. Now, pick "/sh/", "/a/" and "/m/". Put them together. What word would you get now? *Children respond: "sham"*

3. Segmenting Activity

I have several word cards with me. I will read them out loud for you, and you'll tell me the sounds that you can hear in each word. Is that alright? Okay, let's begin. "stamp" *Children respond: "/st/" "/a/" "/m/" "/p/"* Excellent. Now, can you write the sounds on this piece of paper?

Appendix J: Instruments (PLST, FSIT, RT, ST, ORFT)

Scores sheets for PLST, FSIT, RT, ST and ORFT Assessments

Group	: Experimental / Controlled
Name	:
Date	:

Test 1: Productive Letter-Sound Test (PLST)

16 Letter-Sounds:

/eɪ/	/i:/	/aɪ/	/əʊ/	/ʊ/	/uː/	/ɔː/	/31/
ai	ee	igh	oa	00	00	or	oi
/aʊ/	/əː/	/a:/	/uː/	/eɪ/	/i:/	/aɪ/	/əʊ/
ou	er	ar	ue	ay	ea	ie	ow

Minimum Score = 0, Maximum score = 16

Test 2: Free Sound Isolation Test (FSIT)

48 consonant-vowel-consonant (CVC) words Note: The consonant includes initial digraphs, and final digraphs.

Correctly pronounced sounds are circled. Each sound carries one mark.

m ai d	b oi l	st er n	pl ay
l ou d	p ie	h <i>oo</i> k	j ai l
gr ee n	cl ou d	f or m	sh ar p
n igh t	r oo m	s ue	g oa t
j oi n	t or ch	d ie	m ou th
gl ue	n er d	f oa m	sh ee p
l ie	f ar m	fl ow	h er d
d ay	fl oa t	tr ai n	tr ay
tr ue	sp or t	c ar t	b ow
l <i>oo</i> k	p ea k	ch ee k	sh <i>oo</i> k
l igh t	c oi n	cr ea m	f igh t
st oo l	gr ow	m oo n	dr ea m

Minimum Score = 0, Maximum score = 132

Test 3: Reading Test (Blending Skills)

Consonants

Consonant Blends (initial position): tr, fl, sh, ch, gr, sp, st, cl, pl, cr, dr, gl Consonant Blends (final position): th $\theta/$

32 CV/CVC words/ non-words

Correctly pronounced words are circled, and each correct answer carries one mark.

W	ord	Non-word		
said	gloat	bain	coam	
lie	steep	wie	cheel	
stork	cr <i>oo</i> k	chorm	pook	
droop	coil	floop	moin	
stout	perch	boust	wern	
chart	dray	spart	glay	
growth	flight	drow	spight	
speak	glue	pleak	crue	

Minimum Score = 0, Maximum score = 32

Test 4: Written spelling Test (Segmenting Skills)

Consonants

Consonant Blends (initial position): tr, fl, sh, ch, gr, sp, st, cl, pl, cr, dr, gl Consonant Blends (final position): th $\theta/$

C 1	1.	1	• •	1 1	1				1
('orrectl	v cnelt	worde	are circl	ed and	each	correct	answer	carries	one mark
Concen	y spon	worus		.cu, anu	caci	concer		carries	one mark.

W	ord	Non-word		
said	gloat	bain	coam	
lie	steep	wie	cheel	
stork	cr <i>oo</i> k	chorm	pook	
droop	coil	floop	moin	
stout	perch	boust	wern	
chart	dray	spart	glay	
growth	flight	drow	spight	
speak	glue	pleak	crue	

 $\overline{\text{Minimum Score} = 0, \text{Maximum score} = 32}$

Test 5: Oral Reading Fluency Test

The number of words read in 60 seconds is counted. The total number of words read per minute is subtracted with errors made in the vowels sounds trained.

Jolly Phonics: Level 2 –General Fiction The Box by Sara Wernham (2003) Illustrated by Lib Stephen (2003)

Vowel Sounds: ee, oo, or, er, ou, **oo**, ar, oa, ie, ai/ a, e, i, o, u

Miss Beech unpacks some books from a big box. She stores the box in a corner. "I will carry it out soon," she thinks. The children all rush in and see the box. Seth looks at the box. "Hmmm," he thinks. He sits in the box. He pretends it is a red sports car. "Vroom, vroom. I am the winner!" shouts Seth. Meg thinks the box is a boat. She ties her coat to a broom, for the sail. The boat box sails in the wind.

Captain Meg stands at the helm. The boat sails into a storm. It is tossed about. "Help!" shouts Meg. "The boat is sinking." Meg hangs onto part of the boat. She sees some sand and swims to it. Ben is a crab on the sand. The box is his shell. He peeps out from under it. Next Anna gets into the box. She flies around and then loops the loop. The children all clap. Miss Beech looks at the box again. "Perhaps I shall keep the box," she thinks. (175 words)

Appendix K: Biodata of Teacher X

Teacher X's Biodata

Personal Profile:

Name:Date of Birth: 11th November 1985Profession: Academic TeacherGrade: DG41

Educational Qualification:

- Passed 'Sijil Pelajaran Malaysia' (SPM) in the year 2002.
- Passed Bachelor of Education (Teaching of English as a Second Language) from University of Malaya in the year 2009.
- Pursuing Masters of English as a Second Language in University of Malaya (2012-2014)

Continuous Professional Development:

- Kursus Pemantapan Pedagogi Bahasa Inggeris dibawah MBMMBI
- Kursus 'The Teaching of Phonics' 2011
- Kursus Orientasi KSSR & PBS Bahasa Inggeris Tahun 1 2011
- Kursus Orientasi KSSR & PBS Bahasa Inggeris Tahun 2 2012
- Kursus Orientasi untuk Guru-Guru ICTL Tahun 2011 dibawah POL LDP JPN Sarawak (Master Trainer)

Experience:

• 3 years of teaching experience in the rural parts of Sarawak with indigenous children.

Certification:

I, the undersigned certify that to the best of knowledge and belief, this biodata sheets correctly describes my qualification and my self. '

.....)

aurora11rose@siswa.um.edu.my

Appendix L: Phonemic Chart and Oxford Dictionary

Phonemic Chart from British Council



Screenshot from www.oxforddictionaries.com



Definition of sail in English:

Sail Line breaks: sail Pronunciation: /seil (1)) /

NOUN

1 A piece of material extended on a mast to catch the wind and propel a boat or ship or other vessel:

'all the sails were unfurled'

Appendix M: Jolly Readers Level 2



The Box by Sara Wernham (2003) Illustrated by Lib Stephen (2003)

Vowel Sounds: ee, oo, or, er, ou, **oo**, ar, oa, ie, ai/ a, e, i, o, u

Miss Beech unpacks some books from a big box. She stores the box in a corner. "I will carry it out soon," she thinks. The children all rush in and see the box. Seth looks at the box. "Hmmm," he thinks. He sits in the box. He pretends it is a red sports car. "Vroom, vroom. I am the winner!" shouts Seth. Meg thinks the box is a boat. She ties her coat to a broom, for the sail. The boat box sails in the wind.

Captain Meg stands at the helm. The boat sails into a storm. It is tossed about. "Help!" shouts Meg. "The boat is sinking." Meg hangs onto part of the boat. She sees some sand and swims to it. Ben is a crab on the sand. The box is his shell. He peeps out from under it. Next Anna gets into the box. She flies around and then loops the loop. The children all clap. Miss Beech looks at the box again. "Perhaps I shall keep the box," she thinks. (175 words)

Appendix N: Biodata of the Researcher

Researcher's Biodata

Personal Profile:

Name	: Yap Jia Rong
Date of Birth	: 12 th October 1985
Profession	: Academic Teacher
Grade	: DG41

Educational Qualification:

- Passed 'Sijil Pelajaran Malaysia' (SPM) in the year 2002.
- Passed Bachelor of Education (Teaching of English as a Second Language) from University of Malaya in the year 2009.
- Pursuing Masters of English as a Second Language in University of Malaya (2012-2014)

Continuous Professional Development:

- Kursus 'The Teaching of Phonics' 2011
- Kursus Orientasi KSSR & PBS Bahasa Inggeris Tahun 1 2011
- Kursus Orientasi KSSR & PBS Bahasa Inggeris Tahun 2 2012
- Kursus Orientasi untuk Guru-Guru ICTL Tahun 2012 dibawah POL LDP JPN Sarawak
- Kursus Orientasi KSSR & PBS Bahasa Inggeris Tahun 3 2013
- Kursus Pendedahan Program LINUS 2.0 (Literasi Bahasa Inggeris) Tahun 1, 2013 kepada Jurulatih Utama Negeri 2013
- Kursus Pendedahan Program LINUS 2.0 (Literasi Bahasa Inggeris) Tahun 2, 2014 Peringkat Bahagian Bintulu

Experience:

• 5 years of teaching experience in the rural parts of Sarawak with indigenous children.

Certification:

I, the undersigned certify that to the best of knowledge and belief, this biodata sheets correctly describes my qualification and my self. '

..... (Yap Jia Rong) jiarongyap@siswa.um.edu.my

Appendix P: Systematic Synthetic Phonics Training

Structure and content of Systematic Synthetic Phonics Instruction

1. Letter-Sound Training (16 sessions)

Receptive Way – Children listen to the sound produced by the trainer, and select the corresponding grapheme out of the four grapheme-cards given.

Productive Way - Children see the grapheme and select one of four phonemes (numbered accordingly) presented orally by the trainer.

Session	Phoneme-Grapheme	Note
1	/eɪ/-ai	
2	/əʊ/-oa	
3	/aɪ/-ie	
4	/i:/-ee	
5	/ɔː/-or	
6	/ʊ/- <i>00</i>	
7	/uː/-oo	
8	/əɪ/-oi	
9	/aʊ/-ou	
10	/ə:/-er	
11	/ɑː/-ar	
12	/eɪ/-ay	
13	/əʊ/-ow	
14	/aɪ/-igh	
15	/iː/-ea	
16	/uː/-ue	

2. Phonics-Training: FIVE Stages (24 sessions)

Stage A – 5 phonemes/ graphemes eI/-ai, /əʊ/-oa, /aI/-ie, /i:/-ee, /ɔ:/-or

Stage B – 8 phonemes/ graphemes eI/-ai, /əʊ/-oa, /aI/-ie, /i:/-ee, /ɔ:/-or,/ʊ/-oo, /u:/-oo, /ɔI/-oi

Stage C – 11 phonemes/ graphemes eI/-ai, / ϑ v/-oa, /aI/-ie, /i:/-ee, / ϑ :/-or,/ υ /-oo, /u:/-oo, / ϑ I/-oi, /av/-ou, / ϑ :/-er, / α :/-ar,

Stage D - 14 phonemes/ graphemes eI/-ai, /əʊ/-oa, /aI/-ie, /i:/-ee, /ɔ:/-or,/ʊ/-oo, /u:/-oo, /ɔI/-oi, /aʊ/-ou, /ə:/-er, /ɑ:/-ar, /eI/-ay, /əʊ/-ow, /aI/-igh

Stage E - 16 phonemes/ graphemes eI/-ai, $|\overline{\upsilon}|$ -oa, $|\overline{a}|$ -ie, $|\overline{i}|$ -ee, $|\underline{\upsilon}|$ -or, $|\underline{\upsilon}|$ -oo, $|\underline{u}|$ -oo, $|\overline{\upsilon}|$ -oi, $|\underline{a\upsilon}|$ -ou, $|\underline{\upsilon}|$ -er, $|\underline{\alpha}|$ -ar, $|\overline{e}|$ -ay, $|\underline{\upsilon}|$ -ow, $|\underline{a}|$ -igh, $|\overline{i}|$ -ea and $|\underline{u}|$ -ue The children practiced with randomly presented words/ non-word in these 5 phases, listening to the word/ non-word given by the trainer and filling in the blanks to form the complete word/ non-word.

P1 – graphemes at the beginning and the end given

P2 – grapheme in the end was given

P3 – grapheme in the beginning was given

P4 – no grapheme was presented

P5 – a complete CVC word/ non-word is given; children select the corresponding spoken word (by the trainer); out of the 4 given (1 target word, 3 distractors)

At the end of Phase 5, for the next two sessions, children practice putting the sounds together (blending) to form complete word/ non-word and taking apart the sounds to spell (segmenting) individually. Each child works individually and is given a set of letter cards. The trainer demonstrated smooth blending and segmenting, as a part of the blending and segmenting skills training.

Constructing 15 words in the first four phases and synthesizing 10 words in Phase 5 permit children to go to the blending and segmenting phase. If all fives phases within a stage are completed, and children are able to blend and segment 10 words/ non-words (each child has an individual score sheet), they will progress to the next stage. If all the phases in stage E are completed, Phase 1 of that stage restarts until all 24 sessions are completed.

Stage A:

Phoneme-Grapheme Correspondences: eI/-ai, /əʊ/-oa, /aI/-ie, /i:/-ee, /ɔ:/-or Session – Session

Children practiced with randomly presented words:

Words presented are examples and serve as a reference. Words may be added according to circumstances.

Phase	Item (CVC word)		vord)	Description	Example
1				Graphemes at the beginning	md
1	maid	jail	train	and the end given	<u>f_</u> m
2	snail	float	foam	Grapheme in the end was given	d m
3	goat	toast	ties	Grapheme in the beginning	m
	lies	pies	dies	was given	ť
4	sheep	green	cheek	No grapheme was given/ presented	
	wheel	torch	sport	A complete CVC word/	1. maid**
5	fork	form		non-word is given; children	2. foam 3. form
	*words in italic are used as examples		lic are ples	spoken word by the trainer; out of the 4 given (1 target word, 3 distractors)	4. green **target word

Blending/Segmenting (word/ non-word)

Stage B:

Phoneme-Grapheme Correspondences: eɪ/-ai, /əʊ/-oa, /aɪ/-ie, /iː/-ee, /ɔː/-or,/ʊ/-oo, /uː/-oo, /ɔɪ/-oi Session – Session

Children practiced with randomly presented words: Words presented are examples and serve as a reference. Words may be added according to circumstances.

Phase	Item	(CVC v	vord)	Description	Example
1	maid	jail floot	train	Graphemes at the beginning and the end given	md fm
2	goat	toast	ties	Grapheme in the end was given	d m
3	lies sheep	pies green	dies cheek	Grapheme in the beginning was given	m f
4	wheel	torch	sport	No grapheme was given/ presented	
5	fork hook moon broom coin *words i as	form look room boil soil n italic o exampl	book shook stool join are used es	A complete CVC word/ non-word is given; children select the corresponding spoken word by the trainer; out of the 4 given (1 target word, 3 distractors)	 maid** foam form green **target word

Blending/Segmenting (word/ non-word)

Stage C: Phoneme-Grapheme Correspondences: eɪ/-ai, /əʊ/-oa, /aɪ/-ie, /iː/-ee, /ɔː/-or,/ʊ/-oo, /uː/-oo, /ɔɪ/-oi, /aʊ/-ou, /əː/-er, /ɑː/-ar Session – Session

Children practiced with randomly presented words:

Words presented are examples and serve as a reference. Words may be added according to circumstances.

Phase	Item	(CVC w	vord)	Description	Example
1	maid	jail	train	Graphemes at the beginning and the end given	m_d f_m
2	snail goat	float toast	foam ties	Grapheme in the end was given	d m
3	lies sheep	pies green	dies cheek	Grapheme in the beginning was given	m f
4	wheel	torch	sport	No grapheme was given/ presented	
5	fork hook moon broom coin sound nerd stern harp *words i as examp	form look room boil soil mouth herd cart farm n italic a oles	book shook stool join cloud loud fern sharp	A complete CVC word/ non-word is given; children select the corresponding spoken word by the trainer; out of the 4 given (1 target word, 3 distractors)	1. maid** 2. foam 3. form 4. green **target word

Blending/Segmenting (word/ non-word)

Stage D:

Phoneme-Grapheme Correspondences: eI/-ai, /əʊ/-oa, /aI/-ie, /i:/-ee, /ɔ:/-or,/ʊ/-oo, /u:/-oo, /ɔI/-oi, /aʊ/-ou, /ə:/-er, /a:/-ar, /eI/-ay, /əʊ/-ow, /aI/-igh Session – Session

Children practiced with randomly presented words:

Words presented are examples and serve as a reference. Words may be added according to circumstances.

Phase	Item	(CVC w	vord)	Description	Example
1	maid	jail	train	Graphemes at the beginning and the end	md fm
	snail	float	foam	Granheme in the end was	b
2	goat	toast	ties	given	u
3	lies	pies	dies	Grapheme in the	m
5	sheep	green	cheek	beginning was given	f
4	wheel	torch	sport	No grapheme was given/	
	fork	form	b <i>oo</i> k		
	h <i>oo</i> k	look	sh <i>oo</i> k		
	moon	broom	stool		
	boil	join	coin		
	soil	mouth	loud		
	cloud	sound	fern	A complete CVC word/	1 maid**
	herd	stern	nerd	non-word is given; children select the	2. foam
5	cart	farm	harp	corresponding spoken 3. form	3. form 4 green
	sharp	say	play	word by the trainer; out of the 4 given (1 target	***
	tray	day	row	word, 3 distractors)	**target word
	grow	bow	flow		
	night	light	fight		
	tight				
	*words as exam	in italic d ples	are used		

Blending/Segmenting (word/ non-word)

Consonant Sounds Consonant Digraphs

5 target vowel sounds

Stage E:

Phoneme-Grapheme Correspondences: eI/-ai, /əʊ/-oa, /aI/-ie, /i:/-ee, /ɔ:/-or,/ʊ/-oo, /u:/-oo, /oI/-oi, /aʊ/-ou, /ə:/-er, /a:/-ar, /eI/-ay, /əʊ/-ow, /aI/-igh, /i:/-ea and /u:/-ue Session – Session

Children practiced with randomly presented words:

Words presented are examples and serve as a reference. Words may be added according to circumstances.

Phase	Item (CV/CVC word)		c word)	Description	Example
1	maid	jail	train	Graphemes at the beginning and the end	m_d f_m
	snail	float	foam	given	1III
2	goat	toast	ties	Grapheme in the end was given	d m
2	lie	pie	die	Grapheme in the	m
3	sheep	green	cheek	beginning was given	f
4	wheel	torch	sport	No grapheme was given/	
	fork	form	book	presented	
	h <i>oo</i> k	look	sh <i>oo</i> k		
	moon	broom	stool		1. maid** 2. foam
	boil	join	coin		
	soil	mouth	loud	A complete CVC word/	
	cloud	sound	fern		
	herd	stern	nerd		
	cart	farm	harp	non-word is given; children select the	
5	sharp	say	play	corresponding spoken	3. form 4 green
	tray	day	row	word by the trainer; out of the 4 given (1 target	
	grow	bow	flow	word, 3 distractors)	**target word
	night	light	fight		
	tight	cream	dream		
	leak	peak	blue		
	true	glue	sue		
	*words	in italic d	are used		
	as exam	ples			

Blending/Segmenting (word/ non-word)

3. Training Sheet: Sample words for each stage

Stage A

Words: maid, jail, train, snail, float, foam, goat, toast, ties, lies, pies, dies, sheep, green, cheek, wheel, torch, sport, fork, form

Phase	Sample Word/ Group of Words				
1	maid, float, ties,	sheep, torch			
2	jail, foam, lies, g	reen, sport			
3	train, toast, pies,	cheek, fork			
4	snail, goat, dies,	wheel, form			
5	maid	sheep	train	goat	
	jail	torch	sport	fork	
	float	sport	green	lies	
	ties	form	dies	sheep	
	cheek	maid	float	wheel	
	fork	toast	torch	pies	
	lies	ties	train	sport	
	foam	form	green	snail	

Stage B

Words: maid, jail, train, snail, float, foam, goat, toast, ties, lies, pies, dies, sheep, green, cheek, wheel, torch, sport, fork, form, book, hook, look, shook, moon, stool, room, broom, boil, join, coin, soil

Phase	Sample Word/ Group of Words					
1	maid, float, torch	n, b <i>oo</i> k, room, joir	n			
2	jail, lies, green, s	sh <i>oo</i> k, broom, boi	1			
3	toast, pies, fork,	look, stool, coin				
4	goat, wheel, form	n, h <i>oo</i> k, moon, so	il			
5	maid	sheep	train	goat		
	book	jail	sport	sh <i>oo</i> k		
	float	join	coin	lies		
	ties	form	dies	sheep		
	cheek	maid	float	wheel		
	fork	toast	torch	pies		
	lies	ties	train	sport		
	soil form boil snail					
	train shook broom ties					
	foam	sport	hook	boil		
	fork	wheel	porch	green		
	room	toast	float	moon		

*The sets of words in Phase 5 may be reused, with the word order rearranged and target word changed.

Stage C

Words: maid, jail, train, snail, float, foam, goat, toast, tie, lie, pie, die, sheep, green, cheek, wheel, torch, sport, fork, form, book, hook, look, shook, moon, room, broom, stool, boil, join, coin, soil, mouth, loud, cloud, sound, fern, herd, stern, nerd, cart, farm, harp, sharp

Phase	Sample Word/ Group of Words					
1	float, torch, book	x, join, mouth, her	d, cart			
2	jail, lies, broom,	boil, sound, fern,	farm			
3	toast, pies, look,	stool, cloud, nerd	, harp			
4	wheel, form, mo	on, soil, loud, ster	n, sharp			
5	cart	nerd	train	goat		
	book	jail	stern	sh <i>oo</i> k		
	flout	sharp	torch	sharp		
	ties	form	mouth	sheep		
	fern	maid	sport	toast		
	fork	mouth	stool	train		
	farm	moon	stern	torch		
	foam	broom	sharp	fern		
	cloud	sh <i>oo</i> k	tie	moon		
	cloak	short	boil	mouth		
	cart	sheet	berth	maid		
	coin	shoal	train	meek		

Stage D

Words: maid, jail, train, snail, float, foam, goat, toast, tie, lie, pie, die, sheep, green, cheek, wheel, torch, sport, fork, form, book, hook, look, shook, moon, room, broom, stool, boil, join, coin, soil, mouth, loud, cloud, sound, fern, herd, stern, nerd, cart, farm, harp, sharp, say, play, tray, day, row, grow, bow, flow, night, light, fight, tight

Phase	Sample Word/ Group of Words					
1	form, stool, coin	, sound, sharp, trag	y, night			
2	green, sport, boil	, loud, farm, nerd	, light			
3	fork, broom, here	d, cart, play, grow	, fight			
4	die, float, cloud,	tray, flow, shook,	tight			
5	maid	foam	harp	float		
	moon	fork	tray	flow		
	mouth	fern	train	form		
	mow	fight	tight	foot		
	been	pie	tray	grain		
	book	port	tree	greed		
	boil	park	troop	ground		
	blow	plight	trout	gray		
	steep	hook	coat	cheek		
	stool	herd	cook	chart		
	stay	hound	crow	sheep		
	stern	hay	clay	sharp		

Stage E

Words: maid, jail, train, snail, float, foam, goat, toast, tie, lie, pie, die, sheep, green, cheek, wheel, torch, sport, fork, form, book, hook, look, shook, moon, room, broom, stool, boil, join, coin, soil, mouth, loud, cloud, sound, fern, herd, stern, nerd, cart, farm, harp, sharp, say, play, tray, day, row, grow, bow, flow, night, light, fight, tight, cream, dream, leak, peak, blue, true, glue, sue

Phase	Sample Word/ Group of Words					
1	form, coin, sound	d, sharp, tray, nigł	nt, cream, glue			
2	sport, boil, loud,	farm, nerd, light,	dream, true			
3	fork, herd, cart, p	olay, grow, fight, j	peak, blue			
4	die, float, cloud,	tray, flow, tight, l	eak, sue			
5	sport	mail	die	fleet		
	spoon	mart	dork	flout		
	spay	mouth	door	fern		
	speak	meal	deal	flight		
	tort	sheep	boil	brain		
	toot	sharp	bloom	brook		
	tight	show	blow	bray		
	tow	sight	blue	bright		
	lain goat stain tie					
	loan	good	steep	tow		
	lean	gout	stark	true		
	lark	geek	stow	tree		

4. Sample of participant's individual score sheet used during training

e 1	in the second				
3	2	R	e:	 	••
		~			

Phase/ Skill	Number of words constructed	Total number of words (P1 to P4)
Phase 1		
Phase 2		
Phase 3		
Phase 4		
Phase 5	Number of words synthesized	
	Words Formed	Number of words formed
Blending		
Segmenting	Words Segmented and Spelt	Number of words segmented

Appendix Q: KSSR Year 2 English Textbook

Tajuk: Textbook English Year 2 SK KSSRPenulis : Suria, Selajothi, NorehanISBN: 978-983-46-0882-8Penerbit: Dewan Bahasa dan PustakaTahun Terbit: 2012

