English Second Language (L2) Literacy Instruction and Acquisition in Kenyan Rural Primary Schools

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Grace Njoki Mwathe

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I certify that the thesis entitled "English Second Language (L2) Literacy Instruction and Acquisition in Kenyan Rural Primary Schools" and submitted as part of the degree of Master of Education (Spec Ed) is the result of my own work, except where otherwise acknowledged, and that this research thesis (or any part of the same) has not been submitted for any other degree to any university or institution.

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ABSTRACT

Teachers' literacy instructional approaches in English language for children in lower primary (Year 1 to Year 3) Kenyan schools were investigated. Fifteen teachers were given an error scenario task and a questionnaire task, which were used to categorise them as either using context-based, word-based, or mixed (using both context-based and word-level strategies) approaches. The aim was to determine which instructional approach is most effective for early literacy development in a second language context. The results indicated that slightly more than a half of the teachers preferred to use mixed approaches. Further, children who received mixed approach instruction preformed significantly better on all literacy and literacy-related measures than children who did not receive such instruction.

Language, reading and reading-related tasks in English Language were administered to 148 children. The aim was to investigate the literacy developmental trends across the years and establish which of the two variables, word identification skills or second language oral ability, influenced reading comprehension performance. The results indicated that word identification skills independently influenced reading comprehension performance in both Year 2 and Year 3 classes, but language skills did not.

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CHAPTER 1

INTRODUCTION

Every child in Kenya needs help to acquire literacy proficiency in English language because this language plays many critical roles in Kenyan society. For example, English is the official language – the language of government, the judiciary, most of the mass media, technology and commerce. Along with Kiswahili (mainly recognised as a national language in Kenya and a regional language in East Africa), English is also a common language of communication among people from different linguistic backgrounds (Hancock & Angongo, 1982). Perhaps more critical is the fact that English is the language of education from primary to tertiary level. And since English is a second language for the majority of Kenyan children, there is a need to provide them with effective early literacy instruction in this language.

The Education System in Kenya

The Kenyan education system is highly centralised. In 1985 the Ministry of Education restructured the education system to comprise four major levels: preschool, compulsory primary school, secondary school, and higher education. Pre-primary schooling is available to children under the age of six, and is not compulsory. Children begin primary school at the age of six and continue until the age of 14. Primary education has two stages, lower primary (from Year 1 to Year 3), and upper primary (from Year 4 to Year 8). After eight years, children sit a national examination (Kenya Certificate of Primary Education- KCPE), which determines their placement in secondary schools. Those with an above average performance are admitted to national schools, which are fully government funded and therefore well equipped. Others are admitted to provincial or district schools which partially need community support to supplement government funding. Secondary education continues for four years from 15 years of age to 18. Those

students who complete the secondary level sit a national examination (Kenya Certificate of Secondary Education- KCSE) at age 18, and this qualification determines their placement in post secondary institutions including universities. The school year has on average three thirteen-week terms with a three-week break between each term. The schools are open for instruction from the second week in January to the third week in November of each year.

Language and Literacy Instruction

Kenya is a multi-ethnic country with approximately 42 native languages being spoken. As a result, the education policy requires that for the lower primary schooling, children be concurrently taught three languages: their mother tongue (i.e., native language), Kiswahili (national language), and English (official language). From Year 4 English continues to be taught as a separate subject in the curriculum and is also used as the language of instruction for all other subjects. A key objective in the English Course Syllabus (Ministry of Education-Kenya, 1995a) states "At the end of the first three years, the child should have acquired a sufficient command of vocabulary and language patterns to enable him to use English as a medium of learning in upper primary" (p.79). Furthermore, it states that specifically, the child should acquire proficient reading skills in English to enable him/her to read and understand instructions, to read for information and for pleasure.

Unfortunately, this objective is far from being realised, as there is evidence that many children lack basic literacy skills by the time they finish their primary education. For instance, the illiteracy rates for 15 years and over (the age at which children join secondary schools) in 1990, 1995, and 2000 were about 29.2%, 23.0%, and 17.6% respectively (United Nations Educational, Science and Cultural Organization (UNESCO), 2000a). Furthermore, the Kenyan primary national examination results indicate that the performance in English language has been disappointing. For example, in 2002, the Kenya Certificate of Primary Education (KCPE) results indicate that the average score in English was only 40 percent (34

percent in writing composition, 47 percent in reading and grammar) (Daily Nation, 2002).

A number of factors make literacy acquisition in English difficult in Kenyan primary schools. One of these is the unsupportive out-of-school environment. English is not spoken in most Kenyan households particularly in the rural areas, and the language children hear most of the time in their immediate community is their native tongue or Pidgin English (the street language) (Hancock & Angongo, 1982). The implication is that the opportunity for the incidental learning of English outside of the school is severely limited for most Kenyan primary school children. The school must therefore compensate for what the home or the immediate environment cannot provide.

Another factor that is contributing to low English literacy rates in Kenya is a lack of a clear and specific reading curriculum. Reading is not taught as a separate subject, rather it is taught as part of the English language curriculum, which comprises four major areas: listening, speaking, reading and writing skills. As a result, it is difficult to determine both the amount and quality of instructional time that is specifically provided for reading. Pupils in Year 1 to Year 3, for example, receive two and a half hours per week of instruction in English language. This is made up of five lessons per week with each lesson being approximately 30 minutes in duration. It is, therefore, often difficult to address the four main areas of the language effectively within the specified time. Because of the limited time given to reading instruction, literacy development may be particularly affected or delayed.

The teaching approaches as prescribed in the syllabus, also tend to focus more on the teaching of formal language elements and structures than on the specific reading-related strategies. For example, in Year 1, although naming the letters of the alphabet appears as a key learning activity, it does not feature anywhere in the language content section. Instead, the teaching of formal sentence patterns and structures, and vocabulary development form the main part of language content. Similarly in Year 2, the language content again focuses mainly on sentence patterns and structures, vocabulary development (using

pictorial dictionaries), and reading sentences using substitution tables is emphasised. This latter activity involves children choosing a sentence that would mean the same as the target sentence. For example, children may be provided with a target sentence 'The cat saw the dog and jumped through the window' and asked to substitute it with either 'The cat and the dog saw the window and jumped through' or 'the cat jumped through the window after seeing the dog'. In year 2, the literacy learning activities also include identifying the sounds of letters and in groups of letters (e.g., th, sh). However, in Year 3, phonics becomes part of the learning activities for reading skills development. At this stage, children learn letter sounds and spelling patterns through, for example, use of rhymes and tongue twisters. It therefore appears that the emphasis is initially on development of language skills (using context-related strategies) and the word recognition skills are gradually introduced later.

Studies from second language (L2) learners indicate that word recognition skills are crucial in the early stages of reading acquisition (Durgunoglu, 1998; Geva & Wade-Woolley, 1998; Tregar & Wong, 1984). The cross-linguistic transfer principle (Cummins & Swains, 1986) suggests that the word recognition skills primarily transfer across languages. For example, in a study with children who had Spanish as their first language (L1), Durgunoglu (1998), found that both Spanish word recognition and Spanish spelling correlated significantly with English (their L2) word recognition. It appears that for L2 literacy development children need to be provided with an approach that will emphasise word recognition skills earlier rather than later. Tregar and Wong (1984) found that word recognition skills correlated significantly with L2 reading comprehension in elementary grades, while L2 oral ability correlated significantly with L2 reading comprehension in middle grades. It is likely therefore, that children will only develop their L2 skills after their word identification skills have developed.

In Kenya there is no formal procedure for diagnosing children with reading problems or identifying those at risk of reading failure. Classroom teachers are, therefore, left with the task of deciding what measures to use to identify children with reading problems. Similarly, there are no special teachers or reading specialists to provide programs for children who may be experiencing reading

difficulties (hence no formal remedial reading programmes). Those who may have reading difficulties are given support by their classroom teachers as the need arises and time allows. This is an area that has probably not been taken seriously by early literacy providers despite the fact that English is a second language for the majority of children in Kenya.

Focus of the Study

In Kenya, many children complete their eight years of primary education with very low literacy skills in English language. The current study focused on the teachers' literacy instructional approaches, and children's performance on reading and reading-related measures. The first aim of the study was to determine which of the three possible instructional approaches, context-based, word-level, or mixed (combined context and word-level strategies), would be most effective for second language learners. The second aim was to determine which of the two variables: (1) second language oral ability (i.e., language skills) or (2) second language word recognition skills, would influence L2 reading comprehension, and at what year level. A third aim was to examine whether there were gender differences on any of the studied measures.

To answer the first question, the study involved investigation of teachers' literacy instructional methods. To address the second and the third questions, a series of language, reading and reading-related tasks were administered to 148 children in Year 1, Year 2, and Year 3 classes.

Overview

Two theoretical frameworks (whole language and analytical approach) that underpin reading acquisition, and the implication they have on literacy instruction and development are the focus of the second chapter (Literature Review). Different factors that influence or affect L2 literacy development are discussed. These factors include: cross-linguistic transfer, L2 oral ability, and language (i.e., L1 or L2) of instruction in early years of schooling. The chapter concludes with a

brief discussion of the Kenyan literacy instruction and development situation. Chapter three describes the methodology section including a discussion of child assessments and the procedures for analysing teachers' instructional approaches.

Chapter four presents the results of the study. The chapter also includes an in depth discussion of concurrent correlations of language, reading and reading-related measures, and literacy developmental trends across the years. Path analyses of language and literacy measures, and gender differences are also discussed in this chapter. The final chapter presents a general discussion of the major findings from the study. It also includes a brief discussion of some implications for teaching second language learners in the early years of reading acquisition, with particular reference to Kenya. Finally, some suggestions for future research investigations are presented.

CHAPTER 2

LITERATURE REVIEW

Introduction

Learning to read is probably the most important skill in a child's education because it is the foundation for a wide variety of school subjects. Yet because reading is a complex process, many children, and especially those learning to read in a second language (i.e., L2, which is any other language that a child may learn other than the home language or mother tongue), experience particular difficulties learning to read. Reading may be defined as the process of translating print to a form of code from which a reader can derive meaning (Adams & Bruck, 1993; Pressley, 1998; Stanovich, 2000; Tunmer & Chapman, 1998).

This chapter begins with a brief discussion of the two main reading process models. Various strategies that fluent readers employ to identify unfamiliar words including the relative importance of phonological skills will be outlined, followed by a discussion of L2 acquisition and reading ability. Some factors that influence the learning of English as a Second Language (ESL), particularly in literacy area, will also be discussed. Finally the chapter will conclude with a presentation of the research questions.

The Reading Process Models

At least two models of the reading process have been put forth concerning the developmental process of reading. The Whole language model (Goodman, 1986; Smith, 1971; Smith & Elley, 1994) maintains that reading does not involve breaking words into little bits; rather it involves keeping words 'whole'. From this definition of reading, whole language proponents argue that the main strategy readers use to gain meaning is via a 'psycholinguistic guessing game' (Goodman, 1986). Similarly, Smith (1971) argues that skilful readers typically rely mainly on the context and their knowledge of the world to guess the message because

"ease in identifying a word depends very much on the word around it and on our prior knowledge" (p.9). Smith (1971) further argues that "fluent readers make use of all the different aspects of redundancy because they require less visual information to identify letters in words than letters in isolation, and less visual information to identify words in meaningful sequences than in unrelated sequences of words" (p.220). According to the whole language model, words in isolation do not have a single meaning but rather a range of possible meanings as they transact with one another in sentence, text, social and situational contexts, and therefore the reader may never perceive the exact meaning the writer intended. Thus, the process of reading is whole to part, top to bottom, deep to surface, inside out (Weaver, 1994, cited in Pressley, 1998). Smith and Elley (1997) claim that readers get meaning from print before they sound out the words. In support of this claim these authors state for example, that, "If Catherine is reading aloud, the sequence of events moves from print to meaning to sounds. She sees the print, constructs the meaning, then produces the sounds" (p.84). The proponents of this view of reading discourage word recognition via word-level identification strategies and emphasise instead, the use of context to gain meaning.

The necessity for active explicit teaching of reading strategies is also not viewed as important. It is stated that children are able to gain the necessary skills for reading merely by being exposed to literacy experiences. In support of this argument Smith and Elley (1997) state, for example, that "If children are immersed in high-interest print, and given real purposes for learning to read it and write about it, they will acquire by themselves the understanding that sounds are represented by letters, and learn these letter-sound links along with the other cues for meaning. Specific tuition about letters and sounds may help some children when they read, but it may also convey wrong impressions about the difficulty and the purposes of reading" (p.143).

A second view of the reading process suggests a more analytic approach to reading acquisition (Adams, 1990; Adams & Bruck, 1993; Byrne & Liberman, 1999; Chall, Jacobs, & Baldwin, 1990: Foorman, Francis, Fletcher, Schatschneider, & Mehta, 1998; Gough & Juel, 1991; Gough, Juel, & Griffith,

1992; Greaney, 2002; Liberman & Liberman, 1992; Perfetti, 1985, 1991; Pressley, 1998; Spear-Swerling & Sternberg, 1998; Stanovich, 1991, 2000; Tunmer, Chapman, Ryan, & Prochnow, 1998; Tunmer & Chapman, 1996; Tunmer, Herriman, & Nesdale, 1988). According to this view, skilful readers visually process virtually each individual letter of every word they read, translating print to speech as they go. Furthermore, it is argued that children must become sensitive to the sub-word units in both the written word and in the representation of the spoken word to induce sub-word spelling – sound correspondences. Adams (1990), for example, presents a schematic flow chart (see figure 1) where orthographic and phonological processors are viewed as the core to the construction of meaning. The orthographic processor represents the reader's knowledge of the visual images of the word, where individual letters are represented as interconnected bundles of more elementary visual features, while printed words are represented as interconnected sets of letters. The phonological processor, on the other hand, represents the pronunciation of words as a series of complex elementary speech sounds. These along with the context processor link to the meaning processor where the reader gains understanding of the text. This implies that word-level knowledge is the basis of the reading developmental process.

Adams and Bruck (1993) also state that the "Letters and words of the text are the basic data of reading" (p.5). A number of researchers who support this view have also demonstrated that training beginning readers in phonological skills and alphabetic coding can lead to faster rates of reading and spelling acquisition (Byrne, Freebody & Gates, 1992; Chapman, Tunmer & Prochnow, 2001; Foorman et al., 1998; Iversen & Tunmer; 1993; Juel, Griffith & Gough, 1986; Tunmer & Nesdale, 1985; Tunmer et al., 1998). Moreover, some beneficial effects of teaching word-level strategies have been observed in children experiencing reading difficulties as well as those at risk of reading failure (Greaney, Tunmer & Chapman, 1997; Lovett, Borden, DeLuca, Lacerenza, Benson & Brackstone, 1994; Vellutino, Scanlon, Sipay, Small, Pratt, Chen & Denckla, 1996).

Modelling the Reading System: Four Processors
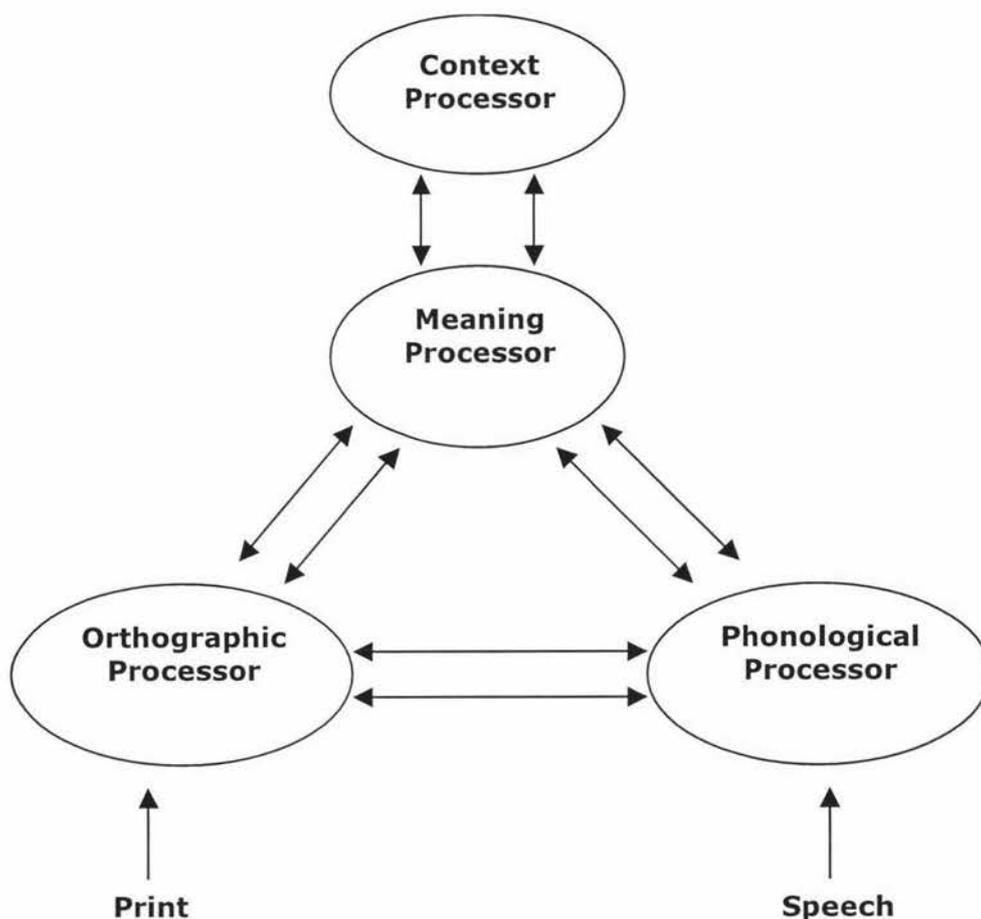
Figure 1. From Adams, 1990, p.22

For example, Lovett et al. (1994) noted that the "Single most important finding of this study is the demonstration that the deficient phonological processing skills of those children with dyslexia were amenable to treatment and that their phonological segmentation, blending, and letter-sound learning could be improved with appropriate intervention" (p.816). Vellutino et al. (1996) suggested that poor readers might also be found to have difficulty on syntactic tasks such as comprehending complex sentences, judging grammaticality, or making use of sentence context for word identification because such tasks make heavy demands on working memory. Many poor readers also have limited working

memory capacity as a consequence of phonological coding deficits. Consistent with this argument, poor decoders comprehend less than more rapid, fluent decoders (Perfetti, 1985).

These two reading models also differ in terms of the assumption of whether reading acquisition is viewed as a naturally developing task (Goodman, 1986; Smith, 1971), or as an "unnatural" task (Gough & Hillinger, 1980). The specific point of contention is whether children acquire reading skills more effectively in a holistic manner or through direct instruction. Specifically, the whole language process model suggests that there are strong parallels between reading acquisition and oral language acquisition.

However, recent research indicates that learning to read, unlike learning to talk, is not natural (Byrne & Liberman, 1999; Gough et al., 1992, Liberman & Liberman, 1992; Perfetti, 1991; Share & Stanovich, 1995). According to this research children do not automatically learn to read as naturally as they learn to talk. They have to learn and be taught how to read. Byrne and Liberman (1999) state that, while all communities of human beings have developed spoken language, only a minority of these languages exist in written form. Historically, written language is a recent cultural invention with some alphabetic languages, for example English, relying on phonics-based characteristics rather than logographs (as is the case for Chinese). This explains why learning to read is harder than learning a spoken language. All societies have an oral language but not all have a written language. Further, all humans appear to have a biological 'oral language acquisition' ability, but not a similar innate ability for reading. Shaywitz (cited in Marcia, 1999) notes, for example, "There isn't a little reading centre in the brain. But humans do have the capacity to read" (p.1). This implies that every child has the capacity and ability to learn to read, given the most effective instructional environment.

Instructional Implications of Differing Views

Given the differences in the underlying assumptions of whole language and the analytic models of the reading process, there are also differences in the classroom instructional methods used by teachers. Whole language instructional procedures are based on the notion that literacy development involves learning to use minimal print, and language structures to gain meaning. This model suggests that learners need to be taught which available cues are most useful in a particular written context. There are a number of sources of information (cues) available to help the reader figure out words and gain meaning from the print. These include: using the context of the sentence, using prior knowledge, using the syntactic knowledge of the language, and using the grapho-phonic knowledge of the word. One of the most frequently cited cue prompts that teachers (in whole language classrooms) use is, 'Does it make sense?' (Clay, 991). Hence, in such instructional programmes children are more likely to be encouraged to skip words, use prior information, read ahead, re-read, or substitute words that make sense, rather than to look at the specific phonological properties of the word. Furthermore, it is claimed that to become proficient in reading, children must learn to read by reading (Smith & Elley, 1994). It is assumed that it is only by reading frequently that a child can come to detect regularities and redundancies present in written language. The instructional implications evolving from such a 'learn to read by reading' approach involves allowing children in the classroom many opportunities to read a variety of books, and to receive instruction using a variety of reading approaches. However, regardless of the variety of instructional approaches used, the whole language-based model does not emphasise the use of word-level identification processes.

In contrast, the analytic approach places more emphasis on word-level skills and strategies for word identification (Liberman & Liberman, 1992; Pressley, 1998; Stanovich, 1996, 2000). This emphasis includes the teaching of the alphabetic principle and phonological sensitivity skills as the foundation skills for word recognition. If children are not taught explicitly to recognise words then comprehension will be adversely affected. As Stanovich (1996) claims "impaired

language segmentation skills lead to difficulties in phonological coding which in turn impede the word recognition process which underpins reading comprehension" (p.155). In other words, a reader who experiences phonological awareness difficulties will be less likely to take advantage of letter-sound knowledge in identifying unfamiliar words and therefore will lack fast and accurate word recognition skills which will lead to reading comprehension difficulties.

Ways to Recognise Words

There are several ways to recognise a word (Gough & Juel, 1991). The general cognitive maturation level of the individual reader (Juel, 1984) and their prior experience (Ehri, 1978; Gough & Hillinger, 1980) largely influences the skill or a combination of skills that the reader uses to recognise words.

Logographic / visual-cue Reading

Logographic reading (Ehri, 1991) involves using only the salient visual characteristics such as symbols, rather than relying on letter-sound correspondences. Many of these words appear as environmental print and include words such as *Coca-Cola*, *McDonalds* and *Kmart*. In an experiment conducted by Gough (Gough et al., 1992) 4-to-5 year olds were presented with four cards each containing one word. One of the flash cards had a blue thumbprint on it. The participants practised reading each word until they could say each word on the cards. The experiment revealed that the children could not identify the word without the thumbprint. And when the blue thumbprint was presented alone, the children read out the word that was associated with the thumbprint. It was also noted that these children learnt how to read this word faster than all the others. This paired-associate word learning strategy of recognising words mainly by focusing on symbols may be useful for preschoolers but eventually becomes ineffective as a word recognition strategy.

Phonetic-cue Reading

This process refers to reading a word based on only a few of its letters (Juel, 1991; Spear-Swerling & Sternberg, 1998). Readers may rely on the first or

the final letter only to identify a word. As a result a child might use the letter c to identify the word cat, g to identify dog and oo to identify the word, book.

Phonetic-cue reading also has limitations because many similar words may differ by only one letter. For example, a phonetic cue reader might misread the word look as book if the cue is oo. Similarly the phonetic cue reader will have a difficult time identifying words like pots, tops, post and stop as they all share the same letters.

A second limitation with this method is that it is not generative because it does not provide a way of recognising completely unfamiliar words. The strategy relies heavily on memory and therefore new words may not be identified as efficiently. Furthermore, Tunmer and Chapman (1998) state that most of the unfamiliar words are content words (nouns, verbs, adjectives) whose average predictability is less than 10 percent compared to about 40 percent for function words (on, to, the), which are typically short, high frequency words that a child can already recognise.

Sight Word Reading

Another way in which words may be recognised is by sight. This involves recognising words as wholes. According to Ehri (1997) the term 'sight' indicates that sight of the word activates the word in memory, including information about its spelling, pronunciation, typical role in sentences, and meaning. There is agreement that for many beginning readers, there is rapid sight-word development of commonly encountered words (Adams, 1990; Ehri, 1992). Though researchers have varying categories of words defined as sight words, most sight words include: words recognised by rote memory (Baron, 1979; Frith, 1980, 1985), irregularly spelled words that cannot be read by normal phonological processing (Adams & Huggins, 1985) and high frequency function words. It is also acknowledged that being able to read words automatically by sight is the most efficient, unobtrusive way to read words in text (Ehri, 1997).

Contextual Cue Reading

Some words can also be recognised by using context cues such as pictures and the preceding text to make predictions about upcoming words (Clay, 1991, 1993; Goodman, 1986; Weber, 1970). Readers have various knowledge sources (cues) available to support word prediction: their knowledge about language, their knowledge of the world and their memory for the text already read. Readers are also able to use syntactic and semantic redundancies of language to generate hypotheses (i.e. guesses). Unfamiliar words may be read using language prediction skills, without necessarily applying phonological processing skills. Many junior level reading texts have highly predictable and repetitive sentence formats. These texts lend themselves to being read by memory. It also appears that the reader uses context cues as the main source of word identification. While this may be partly true, unfortunately, the higher level texts are not presented in such a predictable format and so a continued reliance on context cues will not help with word recognition in higher stages of the reading developmental process.

Another major problem with this strategy, however, concerns the unpredictability of language. Since nearly all sentences are novel, the meaning that is embedded in each sentence must also be novel. Therefore, it is important that all the words in the sentence are read accurately otherwise the intended meaning is likely to be distorted. In addition, it is claimed that the words that carry the most meaning in a sentence are usually the less frequent content words, which, unlike the more frequent function words, cannot generally be predicted from context alone (Gough & Walsh, 1991). For instance, Tunmer and Chapman (1996) have argued that the words that can be predicted in text are typically frequently occurring function words that the child can already recognise rather than less frequently occurring but more meaningful content words.

Analogy Transfer

Another word identification strategy involves the use of analogies (Baron, 1979; Bruck & Trieman, 1992; Goswami, 1986, 1991, 1999; Marsh, Friedman, Welch, & Desberg, 1981). Reading by analogy involves reading a new word by recognising how its spelling is similar to a word already known. Goswami (1999)

says that the "Relations that a child needs to have represented in order to use analogies in reading are the sound relations or phonological relations that operate in the language that they are learning to read" (p. 176). For example, she found that beginning readers could use their knowledge of rhyming words to read new words by analogy (Goswami, 1986). Examples of reading by analogy include words like; dish from the word fish, claw from saw, or beak from peak. It has further been established that analogies between the ends of words (rimes) were much easier for young children to draw than analogies between the beginnings of words (onsets). Reading by analogy thus involves knowledge of onset-rime segmentation where single syllable words may be segmented into onsets (c in cat) and rime (at in cat).

<u>Phonological Recoding</u>

Words may also be read by phonological recoding process. These processes involve transforming graphemes (written symbols) into phonemes (sound symbols) and blending them into pronunciations that approximate real words. Successful acquisition of phonemic awareness (awareness of subcomponents of spoken words) is necessary for children to apply letter-sound correspondence rules in identifying unfamiliar words. Learning to decode largely depends on phonemic awareness, and Tunmer, Herriman and Nesdale (1988) observed that the first graders who were certain to make progress in learning to decode were those who possessed phonemic awareness as well as the names and sounds of letters.

It has often been argued, mainly by whole language proponents, that the relationship between spellings and pronunciations is often variable or irregular (Ehri, 1992). Nevertheless, it has been observed that readers are able to process chunks of letters when they decode words. Treiman, Goswami and Bruck (1990) have shown that words having common letter chunks are easier to decode by readers who are familiar with such letter patterns. Further, Tunmer et al. (1998) argued that since there is no word in English that is completely phonologically opaque, even the irregularly spelled words (e.g. stomach, castle) provide accurate phonological cues to the word's identity. In the word stomach, for example, the st and the m have regular phonemic representation.

Relative Importance of Phonological Awareness to the Reading Process

It is well established that phonological awareness is a strong predictor of fluent reading achievement (Bowers, 1995; National Reading Panel (NRP), 2000; Stanovich, 1991, 1996, 2000; Tunmer & Chapman, 1998, 2002). Indeed Stanovich (1986, 2000) has argued that the ability to decode words in the early stages of reading correlates more highly with phonological awareness ability than with IQ scores (Juel et al., 1986; Siegel, 1993; Tunmer & Nesdale, 1985). This evidence supports the concept that explicitly and systematically teaching children to manipulate phonemes significantly improves children's reading and spelling abilities. Moreover, the development of phonological processing skill has been found to be more important for children who are at risk of reading failure (NRP, 2000). And given the strong causal links between poor phonological processing ability and poor reading progress, remedial reading programmes are being developed to incorporate strategies that explicitly encourage the development of phonological skills (Chapman et al., 2001; Tunmer et al., 1998).

In a longitudinal study of 54 children from first through fourth grade, Juel (1988), found that there was a .88 probability that a child at the bottom quartile on the IOWA Reading Comprehension subtest at the end of the first grade, would be a poor reader at the end of the fourth grade. Of 24 children who remained poor readers, only two improved their decoding skills to average. The other 22 could not decode even the monosyllable pseudowords (e.g. dit, cleef) on the Bryant test. Most of those who became poor decoders entered first grade with little phonemic awareness. Although their phonemic awareness grew steadily in the first grade, they left first grade with less phonemic awareness than the average or good readers possessed upon entering first grade. This contributed to a very slow start in learning the cipher and a number of the poor readers could still not read a single pseudoword on the Bryant test at the end of the first grade. By the end of the fourth grade the poor decoders still had not achieved the level of decoding that the average and good readers achieved by the beginning of second grade.

By fourth grade, the poor decoders were children who were neither competent decoders nor competent listeners. Furthermore, these children expressed a dislike for reading and read considerably less, compared to their peers. Therefore, they lost the opportunity to gain vocabulary, complex syntax, and knowledge of text structures, concepts and general knowledge that come from wide reading, which whole language proponents advocate. On the other hand, the good decoders made considerable progress in listening skills and enjoyed reading. Seemingly, these two groups of children exhibited the Matthew effects of the rich getting richer and the poor getting poorer (Stanovich, 2000).

Byrne, Freebody, and Gates (1992) carried out a study among children through second, and third grade, which investigated the interrelationship between word reading strategies, comprehension strategies, reading time, and phonemic awareness. Word reading strategies were assessed on the students' ability to read two types of letter strings including common irregularly spelled words, (e.g. laugh), a measure they took to reflect sight word reading, and a measure of the ability to read phonologically legal non-words (e.g. lemat). Byrne et al. identified four groups. One group performed above average on sight word reading skills and decoding skills. A second group was below average on both sight word reading and decoding skills. The third group was above average in sight word reading but below average on decoding skills. The final group consisted of those who were good decoders but poor in sight word reading.

The results showed that by third grade, the first group of readers remained the best performing group in reading all types of words (regular, irregular, and nonwords), on listening comprehension, and in phonemic awareness tasks, and they continued to be the fastest readers. The second group was the poorest third-grade performers in the three word lists, in reading comprehension, and in phonemic awareness task, and they remained the slowest in reading. The results indicate that Grade 3 reading skills can be reasonably well predicted from the performance in the previous year. Interesting observations were made with the third and the fourth group. The fourth group (good decoders but poor in sight word reading), which was performing lower than the third group in the second grade, scored higher in Grade 3. These observations support the claim that superior

word identification skills are more relevant to reading comprehension in the early grades than general language skills.

Tunmer and Chapman (1998) using Year 2 and Year 3 children carried out a mispronunciation correction task involving a hand-held puppet that said words the "wrong way". The child's task was to try to figure out what the puppet was trying to say. The mispronounced words presented to the children were all formed from the regularised pronunciations of irregularly spelled words of varying print frequency. For example, the word stom<u>ach</u> was pronounced as <u>stow-match</u>. The aim of the task was to determine the potential contribution of phonological recoding ability to reading exception words in isolation and in underdetermining contexts. When the regularised pronunciations of irregularly spelled words (e.g. <u>stomach</u> pronounced as "<u>stow-match</u>") were presented in isolation, the potentially available graphophonemic information in the words enabled the children to identify many of them. When these same mispronounced words were presented in underdetermining contexts (e.g. the football hit him in the <u>stow-match</u>), there was a two-fold increase in children's performance. These results demonstrated that graphophonemic information contained even in irregularly spelled words could be very useful, especially when combined with sentence context cues.

The second part of the experiment examined more directly the relative contributions of phonological recoding ability and language prediction skill to the identification of the unfamiliar exception words in underdetermining contexts. The results of the contextual facilitation task showed that the accuracy of recognising irregular words improved with context. Of greater interest was the finding that children with moderate or emerging phonological recoding skills showed the greatest absolute gains when phonological skills were combined with context. It appears that the ability of these children to take advantage of the available graphophonemic cues in irregular words was not sufficient to allow them to identify many words in isolation. However, when the words were presented in underdetermining contexts, the performance of these children greatly improved. In contrast, the contextual facilitation scores of the very poor decoders were relatively low, suggesting that if beginning readers are unable to make use of the graphophonic information provided in irregular words, context would be of little or

no benefit to them. Only children who had begun to acquire phonological recoding ability were able to use context to identify unfamiliar words.

Further analysis showed that in learning to recognise irregularly spelled words, phonological recoding ability was much more important than language prediction skill. These results were consistent with the claim that phonological recoding ability provides the basic mechanism for acquiring word specific knowledge (Ehri, 1991, 1992; Gough & Walsh, 1991). This data indicated that phonological recoding ability is necessary but not sufficient for the development of word specific knowledge.

Juel, Griffith and Gough (1986) conducted a study in order to describe literacy-related development through the first two grades and to assess the effects of incoming characteristics, (e.g. ethnicity, oral vocabulary on this development). The significant finding was that both the cognitive variables of listening comprehension and phonemic awareness appeared to strongly influence year-end performance in spelling, word recognition, writing and reading comprehension in first grade, and to a lesser extent in second grade. These findings suggest the need for oral phonemic awareness training for first-grade children with poor phonemic awareness. Without special training, children with poor phonemic awareness appear disadvantaged in learning to read and write.

With regard to cipher knowledge, they found that despite having been exposed to large amounts of print and phonics instruction, many children with poor phonemic awareness could not read a single nonsense word at the end of the first grade. However, after some phonemic awareness was achieved, exposure to print seemingly contributed to cipher knowledge development by providing practice in reading words with regular spelling patterns. The unique contribution of phonemic awareness was found to be higher than the unique contribution of exposure to print. The data indicated that children were not able to acquire spelling-sound correspondence knowledge until a prerequisite amount of phonemic awareness had been attained. Furthermore, without such phonemic awareness, exposure to print does little to foster spelling-sound knowledge. In general, it was observed that the overall large effect sizes of phonemic awareness

(over and above IQ and general language proficiency) underscored the importance of phonemic awareness on early literacy acquisition, indicating that phonemic awareness involves some skill distinct from general intelligence or language ability. It is evident that phonemic awareness is necessary, though not sufficient, for both beginning readers and those experiencing reading difficulties.

Relation of Word Recognition to Comprehension of Text

Comprehension is also an important factor in the reading process. Some authors have characterised reading as a two-stage process: first word recognition (which is through decoding) and secondly comprehension (Juel et al., 1986; Shaywitz, cited in Marcia, 1999). For example, Shaywitz (1999) says, "To understand what they are reading, children must decode words first" (p. 3). Indeed, proficient readers are those who can identify printed words with ease, effortlessly and automatically, and can use their knowledge of spelling-sound correspondences when necessary to figure out unfamiliar words. At the same time they actively construct meaning. Their comprehension extends far beyond an understanding of the literal information in a text to include drawing inferences, making evaluations and using prior knowledge to interpret what they are reading. Therefore, they read strategically. If they do not understand something they have read, they use strategies such as rereading to repair their comprehension. In support of this argument, Datta (2000) refers to word recognition as lower-order skills and comprehension as higher-order skills, affirming that children have to fully master the lower-order English reading skills first. Pressley (1998) also argues that the inability to decode interferes with strategic functioning above the word level, because use of active comprehension strategies requires a great deal of short-term capacity. Thus, poor decoding skills leads to less reading, and little opportunity to increase basic vocabulary and knowledge through reading, leaving a shaky foundation for later comprehension (Juel, 1991).

Decoding skills are, therefore, critical if children are to take advantage of print rich environments, which in effect will lead to development of automaticity. Automaticity is crucial for skilled reading, as automatic word recognition frees up

limited resources in verbal working memory, allowing for the integration of the meaning of the word with the overall meaning of the text. Conversely, slow capacity-draining word recognition processes require cognitive resources that would otherwise be allocated to higher-level processes of text integration and comprehension (Perfetti, 1985; Stanovich, 1986). In sum, both decoding skills and comprehension are necessary for fluent reading. This has lead to what is referred to as the 'simple view of reading' (Gough & Tunmer, 1986; Tunmer & Hoover, 1993).

Simple View of Reading

The simple view of reading maintains that reading consists of two components, one that allows language to be recognised through a graphic representation (decoding), and another that allows language to be comprehended (linguistic comprehension) (Gough & Tunmer, 1986; Hoover & Tunmer, 1993; Tunmer & Hoover, 1993). The view states that reading can be divided into two distinct parts and that both parts are of equal importance. It thus makes two claims: first, reading consists of both word recognition and linguistic comprehension; and second, that each of these components is necessary for reading. Gough and Tunmer (1986) note that if reading (R), word recognition or decoding (D), and linguistic comprehension (C) are each thought of as variables ranging from 0 (nullity) to 1 (perfection), then the two claims of the simple view can be expressed in a simple equation, namely that $R = D \times C$. By implication this view asserts that reading (R) is nil if either or both decoding (D) and linguistic comprehension (C) are nil.

Skilled word recognition (i.e., decoding ability) may be defined as the ability to rapidly derive a representation from printed input that allows access to the appropriate entry in the mental lexicon (Hoover & Tunmer, 1993). This has further been explained by phonological recoding, which is based on the knowledge of the cipher (Gough & Hillinger, 1980) that captures the letter-sound correspondence rules of the language. In this sense, decoding specifically denotes word recognition that is accomplished through phonological recoding. On the other

hand, linguistic comprehension is the ability to take lexical information (i.e. semantic information at the word level) and derive sentence and discourse interpretations. And reading comprehension takes advantage of both decoding and linguistic comprehension to access language, gain meanings, make inferences, and evaluations.

According to the simple view, instruction that advances skill in either decoding or linguistic comprehension will promote skill in reading. Therefore, skill in decoding must be acquired for success in reading alphabetic writing systems. Indeed, in an alphabetic orthography, decoding will allow the recognition of novel printed words, thus freeing instruction from having to provide pronunciations for every novel printed word encountered by the beginning reader. This means that the child will have a mechanism or a strategy to recognise unfamiliar words without having to rely on memory for recall.

In literary terms, therefore, the simple view favours the notion that if decoding skills are adequate to efficiently decode any word encountered, then the limit on reading (literacy) is the limit on linguistic comprehension, and for each increase in linguistic comprehension, there will be an equal increase in reading comprehension. Similarly, decoding skills coupled with low linguistic comprehension abilities will result in poor literacy levels. However, other skills such as thinking, evaluating, judging, imagining, reasoning and problem solving, influence literacy, though it has been argued that these skills can also be found among non-readers (Fries, 1963, cited in Hoover & Tunmer, 1993). What the simple view suggests, therefore, in principle is that the most effective methods in reading acquisition are those that take advantage of varied instructional approaches that seek to enhance in the reader, both word recognition and linguistic comprehension skills.

Second Language (L2) Literacy Acquisition

Research on L2 reading, unlike first language (L1), is limited in scope and quantity, since the topic has largely been ignored. Much of the study has focused on L2 oral acquisition, with very little focusing on L2 students' literacy development (Garcia, 2000). Perhaps the prime factor that has influenced studies in L2 acquisition stems from Cummins and Swain's (1986) interdependence principle. Using Lx and Ly to refer to L1 and L2 respectively the principle states "To the extent that instruction in Lx is effective in promoting proficiency in Lx, transfer of this proficiency to Ly will occur provided there is adequate exposure to Ly (either in school or environment) and adequate motivation to learn Ly" (p.87). This principle has had two major implications on studies related to L2 development. One, the proficiency in L1 translates to proficiency in L2 in that L2 learners are able to transfer their L1 skills to L2 (what has been termed as cross-linguistic transfer). The other issue relates to L1 versus L2 in terms of instruction, whether children should be taught in L1 and transitioned to L2 or a total immersion into L2 settings. Most of the studies have, therefore, focused on investigating the specific skills that children transfer from their L1 to L2 in reading, with much of it being largely based on evaluations of the reading progress of children in English-related bilingual education programs (Durgunoglu, 1998; Geva, Wade-Woolley & Shany, 1993; Oller & Cobo-Lewis, 2002). Other studies, however, tend to compare the performance of L2 learners with monolinguals (Bruck & Genesee, 1995; Rosowsky, 2001) while others investigate the relationship between oral proficiency in L2 and L2 reading development (Geva et al., 1993; Hudelson, 1998; Tregar & Wong, 1984).

Further, reading acquisition in L2 has been characterised by the same conflicting theories and assumptions that are inherent in reading development in L1. Some authors (Anderson, 1999; Hudelson, 1994) have emphasised the whole language view, while others (Birch, 2002; Durgunoglu, Nagy and Hancin-Bhatt, 1993; Geva & Wade-Woolley; 1998) have stressed the need for analytic approaches in instructional progress for L2 learners. Anderson (1999), for example, outlining strategies for consideration in teaching L2 reading, emphasises activating prior knowledge, cultivating vocabulary, and teaching for

comprehension. Similarly, Hudelson (1994), when emphasising the cognitive nature of literacy acquisition and the child's active role in understanding and using written language says "Literacy acquisition, like oral language acquisition, is also a profoundly social phenomenon. Children make sense of print in the environment because they encounter it as an integral part of interesting and important life activities in which they are engaged with others" (p.137). This view of reading has led to advocacy of strategies for L2 literacy development that largely reflects the whole language view of literacy teaching.

This section, therefore, presents a discussion of issues such as whole language teaching strategies for L2 development, analytic approaches for L2 acquisition, cross-linguistic transfer factors, and issues relating to L1 versus L2 instructional programs.

Strategies for L2 Development

Literate Environment

One important teaching strategy involves the creation of a literate environment. This environment is important for demonstrating some of the purposes for literacy and requires children to engage in literate behaviours through extensive reading. This extensive reading is also important for vocabulary development. Anderson (1999) argues that vocabulary development is one of the most critical areas of L2 reading, and further contends that this can only be achieved in a print-rich environment. The role that vocabulary plays in the reading process cannot be underestimated. Indeed many L2 readers cite lack of adequate vocabulary as one of the obstacles to text comprehension. And literature suggests that basic vocabulary should be explicitly taught along with context to effectively guess the meanings of less frequent vocabulary. Yet there is little evidence on how the L2 learners figure out the unfamiliar words (decoding). There seems to be an assumption that many L2 learners struggle with reading comprehension while their decoding skills are adequate. But elsewhere, Datta (2000) states that teachers working with bilingual children who have yet to fully master the lower-order (letter-sound correspondences) English skills may have to work on these areas first.

Use of Predictable Books

A second strategy supported by the whole language view of reading involves the use of predictable books. Hudelson (1994) and Goodman (1986) support the perspective that fluent, effective reading is a process in which a reader predicts his/her way through text, sampling the visual (graphophonic) display and using text content and the semantic and syntactic cueing systems to construct meaning. The argument is that because of the familiarity and predictability of these texts, children are able to construct meaning from them so that their first attempts at L2 reading are successful. In their longitudinal study Hudelson and Serna (1991, cited in Hudelson, 1994) discovered that fluent Spanish readers began their venture into English reading by choosing to read for themselves predictable books that the teachers had previously shared with the class. She therefore contends that to develop fluent, effective L2 readers, it is important to use teaching strategies that help learners view reading as a predicting process. Further, to develop children's confidence in predicting reading, teachers are encouraged to use repeated readings of predictable books. While the strategy of reading predictable books may be important for vocabulary and general comprehension development, it does not address the fundamental issue of word recognition.

Use of Oral and Written Narratives

A third strategy involves the use of oral and written narratives. This strategy allows learners and teachers the opportunities to share their own personal stories. According to Patey (1990, cited in Hudeson, 1994) personal narrative appears to be a fundamental process of the human mind, a basic way of making sense of the world. In sharing their stories, the L2 learners will have an opportunity, with the guidance of their teachers, to practice use of the L2 both orally and in writing. And since L2 learners have difficulty expressing themselves in L2, they may need to hear stories shared orally before producing written ones (Hudelson, 1994). In this exercise, teachers are encouraged to provide the opportunity for L2 learners to interact in writing with a more proficient user of L1. English as a second language learners benefit from this activity in that they engage in an authentic communication situation and this provides a reason for trying out the new language.

Oral Reading to and by Children

The last strategy involves reading aloud to children daily. All L2 learners need to be read to, preferably on a daily basis, by fluent L1 readers. This will demonstrate the power of written stories and create interest in learners to engage in literacy tasks (Anderson, 1999). The eventual effect is that L2 learners will be motivated to read, thus increasing their vocabulary and understanding in L2. To sustain motivation, teachers of L2 learners are required to select storybooks that match the students' reading proficiency. They should neither be too easy nor too difficult. Hudelson (1994) also argues that the literature selected should initially reflect the culture or traditions of L2 learners.

Children are also encouraged to orally read to one another or to groups of other children. This strategy emphasises massed practice in reading that largely depends on automatic word recognition. Interestingly, the extent to which L2 children benefit from oral book reading in English has been questioned. In an ethnographic account of a multilingual preschool classroom (involving Chinese, Pakistani, Russian and African children), Garcia and Godina (1994, cited in Garcia, 2000) observed that ESL learners had a difficult time paying attention to oral book reading in English. However, they were attentive during native-language book reading, responsive to English print in the classroom, and actively participated in literacy centres that allowed them to use their native languages and English.

Analytic View for L2 Development

Although much of the research involving reading problems is based on L1, recent studies with bilingual and L2 learners have suggested that universal, cognitive and linguistic factors, such as phonological processing, working memory, orthographic knowledge and speed of lexical access are involved in reading skills acquisition for both L1 and L2 children (Birch, 2002; Bruck & Genesee, 1995; Durgunoglu et al., 1993; Geva & Siegel, 2000; Geva & Wade-Woolley, 1998; Limbos & Geva, 2001). Limbos and Geva (2001), for example, argue that researchers are considering the feasibility of applying cognitive factors

to the assessment and diagnosis of reading disability among English L2 learners. There appears to be strong data implicating the role of phonological awareness and letter naming speed in predicting subsequent reading abilities in the L1 literature. There is also emerging evidence demonstrating the generalisability of these findings to the L2 population. Similarly, Birch (2002), when stressing the need to teach English L2 readers to use analogy strategies states that the "Best way to teach the analogy strategy is to introduce the idea of phonological segmentation of spoken words into phonemes and into onsets and rimes" (p. 100). This means that skills and strategies involving phonological information are of primary importance in beginning L1 literacy development (Tunmer et al., 1998) also apply to L2 children.

Assessing L1 and L2 Literacy Progress

Limbos and Geva (2001) examined the accuracy of teacher assessments in screening for reading disabilities among students of English as a Second Language (ESL) and as L1. By definition, an ESL student was one whose first spoken language was not English. They investigated teachers' concerns about students who were identified as at-risk of reading failure or who had been referred for further assessment. The teachers were also asked to rate each student in a performance scale ranging from 1 to 7 (1 = very poor; 4 = medium; 7 = very high) or to nominate the students they felt were at risk. Students were rated in comparison to all other children in the classroom in areas such as spelling, reading, arithmetic, oral expression, vocabulary, writing, reading comprehension, oral/listening comprehension, and grammatical sentence structure. Objective measures of reading difficulty were also administered to the 294 ESL and 120 L1 students. These objective measures included decoding of pseudowords, rapid letter naming task, word recognition, and spelling tasks. The results indicated that teacher rating scales and nominations had low sensitivity in identifying ESL and L1 students at risk for reading difficulty. A more effective measure was the use of objective measures, especially for the ESL group. The authors state that, "Screening with a combination of teacher interviews and objective rating scales is the best method of screening, as it has a higher sensitivity (allowing most at-risk

children to be referred) and still has acceptable specificities" (p. 14). According to these results, Limbos and Geva (2001) argued that the use of teacher rating scales or teacher nominations alone would result in a failure to identify many potentially at-risk students.

Another investigation was carried out by Durgunoglu (1998) with Spanish children whose L2 was English. The study involved assessing word recognition, spelling and phonological awareness tasks in both languages. The results showed that English spelling correlated significantly with both English and Spanish phonological awareness as well as with letter recognition. Similarly, English word recognition ability correlated with English spelling and Spanish concepts about print. These findings suggested that phonological awareness, letter identification, and spelling ability in English among other variables (e.g. Spanish word recognition, letter identification, and concepts about print) were strong predictors of word recognition for these L2 learners.

Geva and Wade-Woolley (1998) carried out a study with English speaking children who were learning Hebrew as their L2 through the first two grades. The aim of the study was to investigate children's word recognition and pseudoword reading ability, spelling development, and phonological and orthographical transfer in both languages. The surprising result showed that the percentage of words and pseudowords read accurately in both grades was higher in Hebrew than in English. This finding, they argued could be explained in terms of differences in the complexity of the two orthographies, with Hebrew having a more shallow orthography than English. Nevertheless, notwithstanding differences in the rate of mastering decoding skills in both languages, the results showed that children's word recognition and word attack skills in L1 and L2 were positively and highly correlated. However, with regard to spelling, children performed better in their L1 (English) than in their L2 (Hebrew). This led to the argument that the processing demands on reading and spelling varies from one orthography to another. For example, English relies on familiarity with orthographic patterns for success in both reading and spelling because it is deep for readers and spellers. On the other hand, Hebrew makes different processing demands on readers and spellers in that the shallow orthography used for decoding enables beginning

readers to rely on letter-sound correspondences for word recognition. In spelling, however, a strong orthographic representation in memory is required for recall. Geva and Wade-Woolley (1998) therefore, concluded that orthography-dependent component processes are active, as children gain mastery of specific reading and spelling features of each orthography.

Rosowsky (2001) tested six bilingual (English-Pakistani) and six monolingual (English) pupils using the Neale Analysis of Reading Ability. The results indicated that the bilinguals performed significantly higher (Average raw score = 52) than monolinguals (Average raw score = 36), in reading accuracy. However, in comprehension, the monolinguals (74) outperformed the bilinguals (55). An analysis of miscues showed that the monolingual pupils used substitutions about 65% of the time and mispronunciations 24% of the time. The bilingual pupils, on the other hand, used substitutions about 22% of the time and mispronunciations 71% of the time. This led to the argument that monolingual pupils were using strategies that strove to elicit meaning from the text. The bilingual pupils were using strategies that were more word-based, resulting in more mispronunciations than substitutions. However, there was also a low performance in comprehension. Although the above argument may be valid, it is worth pointing out that when learning to read in L2 children may have less of a language base on which to construct meaning. It may be argued that the reading comprehension among bilinguals, though low, may have been largely due to good word recognition, because other factors (e.g. listening comprehension and vocabulary) have been found to influence reading comprehension (Birch, 2002; Geva et al., 1993).

What the above studies suggest is that both L1 and L2 learners need to master the word recognition skills as a base for proficient reading. This may be even more critical for L2 learners who may not have an adequate vocabulary repertoire to engage in substitution or guessing skills while reading. Additionally, extensive practice in reading is necessary, especially for L2 children, to develop vocabulary, syntactic and semantic awareness, which are necessary but not sufficient for reading comprehension. Therefore the bottom-up and top-down processes are both essential and critical for fluent reading, but low-level

(decoding) processes may of necessity, precede higher-level (meaning making) processes in instructional processes. Birch (2002) says "in fact, the bottom of the reading processor serves the top because the more efficiently and "quietly" the bottom functions, the more attention there will be for higher-level processing of meaning, implications, outside references, and so on" (p. 146).

Cross-Linguistic Transfer of Reading Skills

Following Cummins and Swain's (1986) inter-dependence hypothesis, studies have investigated the specific types of reading skills and knowledge that bilingual children transfer from one language to another (Durgunoglu et al., 1993; Pennington, 1996; Verhoeven, 1994). For successful transfer of skills, beginning L2 learners must be literate in their native language. The extent to which children in multilingual contexts are able to transfer their reading skills from L1 to L2 largely depends on the writing systems involved. Birch (2002) notes that in the process of transfer, there could be either facilitation and/or interference. Facilitation may be expected if the writing systems are similar in L1 and L2, for example use of the alphabets (e.g., Spanish and English). Interference may occur if the beginning reader has a characteristically different script from the one in L2 (e.g., Chinese and English) as well as when the learner is moving from a transparent alphabet L1 (e.g., Hebrew) to a reasonably opaque L2 such as English (Birch, 2002). Further, different scripts or orthographies determine the specific skills that will transfer, whether the reader will place more emphasis on bottom-up analytic processing strategies or on top-down holistic strategies for comprehension (Pennington, 1996).

Durgunoglu (1998) found that English word recognition was correlated with both Spanish word recognition (r = .51) and Spanish spelling (r = .55). English spelling was also correlated with both Spanish word recognition (r = .79) and Spanish spelling (r = .74). This led to the conclusion that there was a significant link between word recognition and spelling proficiencies in the two languages. Further analysis revealed that phonological awareness in English correlated with phonological awareness in Spanish (r = .69). Although English phonological

awareness performance was affected by other developments in Spanish literacy, for example, syntactic awareness and concepts about print in Spanish, multiple-regression analysis indicated that Spanish phonological awareness and letter identification, accounted for 84% of the variance in the English spelling performance.

The above results are consistent with an earlier study in which Durgunoglu et al. (1993) reported that the children's Spanish phonological awareness and Spanish word recognition significantly predicted their English word recognition and pseudo-word recognition. Children who had adequate phonological awareness and Spanish word recognition skills, performed better on the transfer tasks compared to those children who could read some Spanish words, but who demonstrated low Spanish phonological awareness. The pattern in these two studies shows strong cross-language transfer and effectiveness of phonological awareness in one language (L1) on the L2 decoding processes. Durgunoglu et al. (1993) argued that children were able to transfer metalinguistic abilities related phonological awareness in Spanish to English word recognition because similar types of word recognition processing underlies the two languages.

Geva et al. (1993) conducted a study to examine bilingual children's concurrent reading and spelling development in two languages. They reported that first-grade English speaking children who were acquiring Hebrew as a second language did not become confused when they were provided with concurrent literacy in Hebrew and English. This indicates that instruction in English had not impeded the students' Hebrew language and reading performance. When they compared the children's first-and-second-grade reading and spelling performance, they found that the children performed significantly better on Hebrew decoding tasks than on Hebrew spelling or English decoding tasks, reflecting the more consistent and regular grapheme-phoneme correspondence of Hebrew compared to English. This indicates that the children were able to transfer their decoding skills to Hebrew and the L2 maintained its advantage because of its shallow orthography.

Verhoeven and Aarts (1998) compared the performance of Turkish pupils living in Netherlands with that of Dutch children and Turkish children living in Turkey. The study involved giving children word decoding, spelling, and reading comprehension tasks as well as syntax and vocabulary tests in both languages. The results first indicated that Turkish children in the Netherlands appeared quite proficient in acquiring literacy in their L1. Although the bilingual pupils lagged behind their Dutch peers, their word decoding and reading comprehension was significantly higher than their Turkish peers in Turkey. The key finding showed that decoding skills easily transferred from one language to another. The Turkish word reading efficiency and reading comprehension measures were also good predictors of their Dutch performance. The authors argued that this was possible because both the Turkish and Dutch languages make use of the Latin alphabet, and possess a similar writing system. Similar results have been found by Bialystok (1997). She reported that 4- and 5- year-old bilingual preschoolers (French-English and Mandarin-English) outperformed monolingual English-speaking preschoolers on a metalinguistic task (specifically related to beginning reading) and a moving word task (in which a word placed under its corresponding picture was accidentally moved to a different picture). She interpreted the superior performance of the bilingual children, who performed the task equally well in both languages, to mean that they not only had a heightened knowledge of symbolic representation as encoded in text, but that they also could transfer this knowledge from one language to another.

Muljan, Koda, and Moates (1998) studied English word recognition ability in Indonesian and Chinese students of English to find out whether the alphabetic writing system of Indonesia would facilitate reading in English when compared to Chinese writing. Their results suggested that there was some positive transfer from the L1 reading processor to the L2 when both the L1 and L2 were alphabetic systems. However there was no positive transfer from Chinese to English reading because the writing systems are so different. L1 knowledge of the alphabet, therefore, aided the Indonesian students, but L1 knowledge of logographs did not aid reading alphabetic writing.

Chikamatsu (1996) studied Americans and Chinese learners of Japanese, using Japanese Kana because it is a different writing system for both learners. Kana is syllabic and therefore slightly more similar to the American learners alphabetic system than the Chinese logographic system. Chikamatsu found that the Chinese relied more on the visual information in L2 Kana words than did the Americans, and that the American individuals utilized the phonological information in Kana more so than did the Chinese individuals. The findings indicated that different strategies transfer to L2 word recognition. The Chinese readers transferred their preference for a meaning-based visual strategy, while the English L1 students transferred their sound-based strategy.

Gottardo, Siegel, Yan, and Wade-Woolley (2001) administered phonological, syntactic, and orthographic processing skills tests in Chinese and in English to 65 bilinguals (Chinese-English). Results indicated that phonological skill was correlated across L1 and L2. Further, phonological skill in both L1 and L2 was correlated with L2 reading and contributed a unique variance to L2 reading, even though the children's L1 was not written in an alphabetic orthography, whereas the L2 had an alphabetic orthography. This finding confirms the evidence for cross-language transfer of reading skills, particularly phonological processing skills.

Aronin and Toubkin (2002) investigated the language interference and transfer of reading techniques in L2 (Hebrew) and third language (L3) (English) among Russian-speaking students in Israel. The results indicated that majority of the students immersing in Hebrew (L2) felt that neither Russian (L1) nor English (L3) interfered with their L2 studies. Similarly, Russian was not perceived as hindering their progress in English. However, 51% of the respondents claimed that Hebrew interfered with English. On the other hand, results from both Hebrew and English programs showed that a significant number of students transferred learning skills across languages. This led to the suggestion that, apart from L1, previous learning of a foreign language plays an important role in the transfer principle. Aronin and Toubkin's study and others above contribute to a growing body of evidence for cross-linguistic transfer of reading skills across languages.

L1 versus L2: Instructional Issues

Issues have been raised as to whether instruction in multilingual settings should be in L1 or L2 especially given Cummins and Swain's (1986) interdependence principle, in which they proposed that the successful transfer of knowledge and expertise across languages was dependent on the development of cognitive proficiency in one language (usually native language). Further, where instruction is in L2, questions have been raised as to whether children should be put in transition or immersion programs. In fact, Johnson and Swain (1994) contend that even the early and the late immersion programs are different and therefore require different approaches. Given the advantages of educating children in their L1, both for their later acquisition and transference of reading skills to other languages, some authorities have advocated for L1 first (Kamanda, 2002; Spada & Lightbown, 2002; Young, 2002). Others, however, have questioned the effectiveness of such instruction especially for communities where L1 literacy is less developed (Baker, 1998), for example in Africa. Further, the issue is compounded by other factors such as the notion of national unity through a single official language, mainly defended by policy makers who point out the practical and financial drawbacks involved in teaching in the L1 in multilingual settings. Similarly, the communities wish to see their children educated in L2, which more often is the language of economy and technology (Baker, 1998; Johnson & Swain, 1994; Morrison & Lui, 2000; Setati, Alder, Reed & Bapoo, 2002; Young, 2002). For example, Morrison and Lui (2000) when looking at the use of English in Hong Kong as a medium of instruction, state that people seek and use English for a variety of reasons; for instance, economic and political, to achieve necessary fluency in a world-wide *lingua franca* (a socio-linguistic term used to refer to any language used to enable routine conversation between groups of people who speak different native languages), and thereby to survive in a world-wide market and diverse culture.

In arguing for instructional programmes in L1, Young (2002) states that literacy in terms of reading and writing is at the basis of education and thus, the decision regarding the language of instruction for such basic skills is crucial. This

is because the language used in education, sends both implicit and explicit messages to students on the value of their vernacular and the local culture. She contends that instruction that excludes the use of vernacular (L1) in education limits the use of the L1 of the student to the home and other community activities. This probably sends a negative message to the child and community about the value of their language and the validity of its use, both in the classroom, and beyond.

It is probably the above view that has led to the practice of transitional bilingual education programmes in some places. In Northern Quebec for example, Inuit students receive their early schooling (kindergarten to grade 2) including initial literacy training in their L1, Inuktitut. After that their education is entirely in their L2 (English or French) except for a brief daily period of instruction in Inuktitut. From classroom observations and interviews, Spada and Lightbown (2002) found that students were experiencing serious difficulties coping with their subject matter classes in a L2. For this they argued that, while the limitation on the learning of L2 were a cause for concern, an even more disturbing problem in Inuit communities was the evidence that the students were losing or failing to develop their L1, especially in terms of literacy and language for academic purposes. This means that these children may not be able to fully benefit from the principle of cross-linguistic transfer of languages.

In Botswana, Arthur (1997) found a similar transitional programme where children first received their education in Setswana, the main language spoken in Botswana, from standard 1 to 4, followed by a changeover to English from standard 5. Surveys indicated that both pupils and teachers favoured English as the medium of instruction largely because of future employment opportunities. Arthur, reports that 80% of the sample expressed agreement or strong agreement with the proposition that English should be the sole medium of instruction throughout the primary school. Consistent with this result, favouring L2 for instruction throughout the primary school was Kamanda's (2002) findings in Sierra Leone, where parents and teachers favoured instruction in English (their L2), because of the economical, educational, and political opportunities that are associated with it. A high level of proficiency in English, for example, translates to

good academic performance, which furthers one's opportunities in the labour market, and therefore a high social economic status.

The above cases indicate the dilemmas that many ex-colonial African countries continue to face with regard to literacy and medium of instruction. Following UNESCO's (1953, cited in Kamanda, 2002; Wagner, 1998) declaration favouring instruction in first year in L1 (sometimes Mother Tongue) most ex-African colonies have tried to use L1 for beginning learners, some alongside L2 and others gradually introducing L2, probably after 2 or 3 years of schooling. The question of what language the children should first become literate in still persists in a number of countries. Baker (1998) cites Nigeria as an example where in the colonial era, the primary pupils learned in their mother tongue for the first few years before changing to English. After independence, English was introduced from class one. This policy was changed back in the mid-70s, when English was taught as a subject in the first few grades but was the medium of instruction from class four. In Zimbabwe the first three grades are taught in Shona (a native language), with a gradual introduction of English. And because both Shona and English use the Latin alphabet, there may be transference of reading skills between the languages, as this country has recorded 76% literacy rates (Baker, 1998). In Senegal, the instruction medium has always been French (their L2) with Wolof and Mandika (the two popular native languages) being taught as subjects. Baker (1998) reports that 81% of the respondents thought that education should be in French and interestingly about 34% maintained that, "Once you have learned French, your own maternal language would be easy to learn to read later" (p. 23). This suggested that fluency in L2 would supposedly transfer to fluency in L1.

Elsewhere, the situation is more complex owing to the presence of majority and minority native languages. Children from minority languages, for example, Tumbuka in Malawi, have to learn two 'foreign' languages: Chichewa, the national language and English the official language. Anuak children in Ethiopia also have to learn Amharic, the medium of instruction for the first eight grades and English, the instruction medium in High School. Similarly, Berber-speaking children in Morocco have to learn in standard Arabic from grade one and French from grade

3. Morocco may be said to be a multilingual society in which three language systems co-exist: Arabic, Berber and French. During the five primary school years, instruction is in standard Arabic (including reading and writing) with provision for French language and literacy in the last three grades. For Berber children, therefore, both Arabic and French may be said to be second languages. Wagner (1998) carried out a longitudinal study of reading related tasks with both Berber and Arab children on Arabic and French languages. Results from the first year of the study showed that Arabic-speaking children outperformed Berber-speaking children in Arabic reading achievement. However, the difference between language groups diminished with time and was no longer statistically significant during the later years of primary schooling. Thus, the Berber-speaking children appeared to catch up with their Arabic peers.

With regard to French instruction, which begins at grade 3, the children were tested in Year 3 and 5. No differences in French reading achievement by Arabic or Berber mother tongue speakers were found in the two assessment times. Regression analyses were performed to investigate the level of transference of skills from Arabic to French. The analyses indicated that each year of Arabic reading ability contributed a significant additional portion of variance to the French reading score in Year 5, supporting the notion of transfer from first to second language literacy. Further, analysis of specific reading sub-skills showed that Year 1 Arabic word-decoding skills was by far the best predictor of French reading achievement. Although the two scripts, Arabic and French, differ both in form and reading direction (right-to-left versus left-to-right), this finding seemingly supported the principle of transfer of alphabetic decoding across highly contrasting orthographies. This result supports the hypothesis that first language literacy provides an important underlying structure on which to build second language literacy acquisition, with the benefits of increasing children's competence in basic decoding skills in first language literacy being apparent.

Perhaps of interest to Wagner's (1998) study is the finding that the Berber-speaking children, who were monolingual when they entered primary school, made daily progress towards Berber-Arabic bilingualism during the five years. This finding challenges the common generalisation of putting the first language

first, seeing that these children were able to learn in their L2 (Arabic) and catch up with their peers. Furthermore, they made progress in French, which may probably be considered as their third language. This made Wagner (1998) question how one would choose between a L2 that has many useful and engaging printed materials, and a local language (like Berber) with no or limited quality materials. This being a typical case of many developing countries, especially in Africa, which have languages that are either unwritten or that have only recently developed orthographies. In such cases, the debate over the language of literacy instruction needs careful consideration of the contexts in which transitional literacy is enacted. Further, it is important to question the instructional procedures and approaches that are in use in both L1 and L2. For, if children are to fully benefit from the cross-linguistic transfer principle, then both L1 and L2 (in multilingual contexts L1 L2….Ln, where n is the number of languages) must be based on instructional procedures that are widely supported by data. Studies cited above show that, for alphabetic languages, a key skill that transfers across languages is phonological processing skill. It is, therefore, important that particularly the L1 is based on such skills that can easily transfer to other languages.

L2 Oral Proficiency and L2 Reading

A number of studies have investigated the relationship between oral proficiency in L2 and L2 reading ability (Durgunoglu et al., 1993; Geva et al., 1993; Tregar & Wong, 1984; Verhoeven, 1994). Most of these studies have indicated that variables other than oral language proficiency were more powerful predictors of the children's reading task performance in L2. A partial explanation for this finding is that not all young children (monolingual and bilingual) who are orally proficient in a language can read in that language. For example, in a study of the concurrent literacy development of English speaking children who were learning Hebrew as a L2, Geva et al. (1993) revealed that the children's limited oral proficiency in Hebrew did not adversely affect their Hebrew spelling or decoding, which had been explicitly taught. The children were able to spell and decode at levels beyond their beginning L2 status.

Similarly Durgunoglu et al. (1993) with Spanish-English bilinguals, and Verhoeven (1998) with Turkish-English bilinguals, found that a key predictor of bilingual children's reading in the L2 was their ability to transfer knowledge about reading from one language to another, other than L2 oral proficiency. On the other hand, Limbos and Geva (2001) found that L2 oral proficiency contributed to misclassifications of ESL students. Because of their rudimentary L2 oral skills, ESL students' reading skills were mistakenly assessed as poor. More often ESL students are placed in classes where they are taught vocabulary and oral language skills, with the assumption that this will result in improvement in reading ability. However, oral language skills such as narrative and communicative adequacy have not been found to correlate significantly with pre-reading variables such as phonemic awareness, print production, and decoding (Durgunoglu et al., 1993). Indeed, research has indicated that oral language skills such as vocabulary or grammatical knowledge were either marginally related or not related to word-identification performance (Durgunoglu et al., 1993; Geva & Siegel, 2000). This has made Geva and colleagues (Geva et al., 1993; Geva & Wade-Woolley, 1998; Limbos & Geva, 2001) speculate that the oral proficiency measures used with young L2 children did not capture the types of oral language knowledge and skills that predicted their reading.

Tregar and Wong (1984) studied 200 Chinese speaking and 220 Spanish-speaking students through grades 3 to 8. The tasks administered included an oral language test and a reading comprehension test in both native and English languages. The aim was to determine which of the two variables (L1 reading comprehension or L2 oral ability) predicted L2 reading comprehension. The data was examined separately for elementary (grades 3-5) and middle school (grades 6-8) students. The results showed that there was a higher correlation between L1 reading and L2 reading levels (0.95) than between L2 oral and L2 reading levels (0.10), for Spanish students in elementary grades. For the middle school children, there was a moderate correlation (0.42) between English reading scores and English oral scores, and a low correlation (0.26) between Spanish reading and English reading. Similar results were found with the Chinese group. There was a higher correlation (0.40) between L1 and L2 reading levels than between L2 oral ability and L2 reading level (-0.17) in elementary group. For the middle group

there was a higher correlation between L2 oral ability and L2 reading level (0.59) than between L1 and L2 reading levels (0.14). These results indicate that in elementary levels, L1 reading ability is a stronger predictor of L2 reading proficiency than L2 oral ability, a result that is consistent with Cummins and Swain's (1986) interdependence principle. Interestingly for the middle group, L2 oral ability more strongly predicted L2 reading ability than L1 reading ability. This may mean that as the children become proficient in L2 reading, they develop vocabulary and therefore orally practice use of the language, which in later years further reinforces their L2 reading ability.

Studies have indeed established that code switching (orally switching from one language to another) is very common in bi-/multilingual contexts even at classroom level (Jiminez, Garcia, & Pearson, 1996; Setati et al., 2002; Young, 2002). For example, Jiminez et al. (1996) observed that what really differentiated the middle school Spanish-English bilingual successful readers was their unitary view of reading across the two languages, occasional use of cognate strategies to figure out unknown vocabulary, code-switching, and translating (using one language to explain what was read in the other). They argued that the students' code-switching and translating should not be viewed as compensatory strategies, but as resources that reflected their bilingual identity. On the other hand, Setati et al. (2002) state that the most important aspect of bi-/multilingualism (that which makes the bi-multilingual person an integrated whole) is code switching, and can therefore be expected to occur in bi-/multilingual classroom communication. They further pointed out that code-switching should be viewed as a learning and teaching resource that provides the support needed while the learners continue to develop proficiency in the language of learning and teaching. In this sense, code switching plays a bridging role between native language and L2. Therefore, in early years, L2 children should be provided with instruction that is most beneficial as they move from low oral proficiency to code switching to oral fluency in L2.

Socio-Cultural Factors

A number of factors impact on children's literacy development. Similarly, socio-cultural factors can affect children's literacy acquisition either positively or negatively, especially in multilingual contexts where language issues are prevalent. One of the factors that has become a source of concern to researchers is gender difference in academic achievement and particularly literacy development. This has stemmed from findings in some countries, for example, New Zealand and the United States, that boys consistently achieve lower than girls in later grades, and are more often placed in reading remedial programmes (Prochnow, Tunmer, Chapman, & Greaney, 2001; Shaywitz, Shaywitz, Fletcher, & Escobar, 1990). According to the above studies, however, the disproportionately high number of boys relative to girls, supposedly experiencing reading difficulties, may be explained by behavioural differences rather than early literacy achievement differences. For example, in their study Prochnow et al. (2001) found that there were no significant differences between boys and girls on all but one of the literacy achievement, literacy-related and self-concept measures. The one exception was for the middle of Year 3 reading self-concept assessment where boys reported higher reading related self-concepts than girls. This led them to two conclusions. First, boys appear to begin school with cognitive abilities and attain similar levels of literacy related performance for the first 3 years of schooling as girls. Secondly, they concluded that the school selection for placement in reading remedial programmes was biased in favour of boys based on their classroom behaviours rather than to boys performing more poorly than girls on measures of reading-related skills and performance.

On the other hand, with regard to developing countries, Benson (2002) says that this is an area that is less researched despite the high illiteracy levels. According to UNESCO (2000b) the illiteracy rates (defined as the proportion of persons who cannot with understanding both read and write a short simple statement on their everyday life) for females are generally higher than for males. For instance, in 2000, the average percent illiteracy rates for females, 15 years and over, in Sub-Saharan Africa (for some selected countries, see figure 2) was

higher than the regional total average. To improve girls' participation and performance in literacy programmes, Benson (2002) has argued for bilingual programmes for Africa. Analysing such programmes in some African countries (i.e., Guinea-Bissau, Niger, and Mozambique) she states that bilingual programmes more positively impact girls than boys. In Mozambique, for example, the percentage of female bilingual students who remained in school through class 4 was 11% higher than for bilingual boys, and 39% higher than the national average for girls. This led her to suggest that there are indications of a positive connection between girls' school participation, which has traditionally been much less than that of boys in terms of enrolment, retention, and graduation, and use of native language (L1) in schools.

Another factor that may cause concern is school and community support for bi/multiliteracy. Hornberger and Skilton-Sylvester (2000), for example, argue that for children to become biliterate, they need to be supported along three continua: the macro-micro continuum (political and economic factors that support or detract from the development and acceptance of biliteracy), the monolingual-bilingual continuum (the use of both languages in school and societal contexts), and the oral-literate continuum (the use and support of oral and written language by the school and community). They give examples of Puerto Rican and Cambodian communities whose children were exposed to an English-only acquisition context. The former community generated the institutional support necessary to provide its children with Spanish literacy instruction while the latter emphasised religious and traditional customs. The observation was that the Cambodian children lost their ability to appropriately communicate in Khmer, their native language. The implication here is that there has to be societal and school effort to support bi/multiliteracy. The eventual effect, Cummins & Swains (1986) argue, is that this will send positive information to L2 learners about the relevance of their native language thereby creating interest and motivation about reading.

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Figure 2
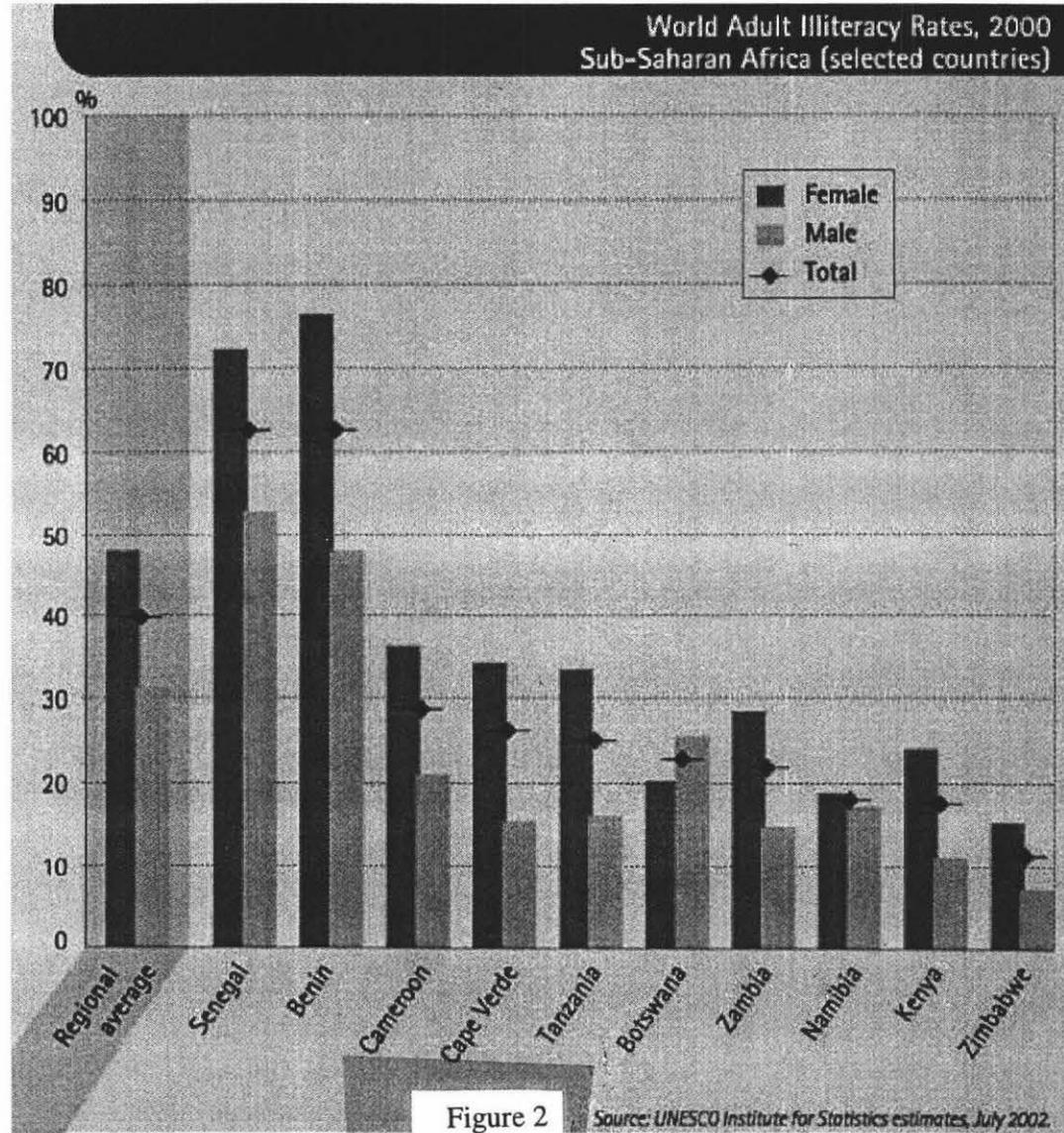
However, there are cases where bilingual programmes have been banned. An example is in California where they were banned in the belief that they were holding Hispanic children back (Taylor, 2000). The Hispanic literacy scores improved, but it was also observed that the scores improved for Hispanic children still in bilingual programmes and for those who had never been in them. This led to the argument that wider changes in literacy instruction are what made the difference, a claim supported by results from Auckland's Don Buck School in New Zealand (Taylor, 2000), where early English phonics instruction has virtually eliminated the ESL literacy gap.

Moreover, systematic phonics instruction has been found to be more effective in improving the reading skills of children from low-income backgrounds (Chall et al., 1990; NRP, 2000), another factor that may be of interest particularly to developing societies. Chall et al., for example, stated that results of research for over nearly seven decades show that word recognition and phonics are of first importance for progress in early reading. A review of the study on reading related issues in the United States found that the research conducted to date strongly supports the concept that explicitly and systematically teaching children to manipulate phonemes significantly improves children's reading and spelling ability. This is consistent with Taylor's (2000) claim that "contrary to what most teachers and parents believe, good teaching is more influential than the educational handicaps that children bring with them from home" (p. 33). What this means is that irrespective of the language(s) of instruction, gender, and socio-economic levels, children need to be provided with effective literacy instruction for them to become skilful readers.

The Kenyan Literacy Development Situation

Kenya is a linguistically diverse nation with approximately 42 spoken native languages. Therefore, children (particularly in the rural areas) have to concurrently learn three languages: the native language of the community in which the child grows, the Kiswahili (national) language and English from Year 1 to Year 3. From Year 4, both Kiswahili and English are taught as subjects in the curriculum while

English continues to be the medium of instruction for all other subjects. To the majority of these children, both Kiswahili and English are 'secondary' languages. Kiswahili is a language that has evolved over the years out of the interactions between the Arabs and the Bantus of the East African coast. These children have to engage in literacy activities in three languages. For example, children living in central Kenya where the main native language is Kikuyu, have to learn how to read and write in Kikuyu, Kiswahili and English. Notably, all languages in Kenya use the Latin alphabet, and therefore, the orthographies are relatively similar. Kiswahili and other native languages, however, have shallow orthographies (a one-to-one letter-sound correspondence) compared to English, which has a deep orthography.

Because children have to learn three languages in the lower primary school, teachers of these children are also required to have a knowledge base of all these languages. Lower primary school teachers, therefore, generally teach all subjects to their classes. As language teachers, they are responsible for integrating reading instruction with the instruction in grammar, vocabulary, speaking, listening and writing in every language. As a result there may be a tendency for teachers to focus more on the teaching of language elements and structures than on the teaching of reading skills. Moreover, teachers may confuse teaching children to read in L1 (native language) with teaching them to read in L2 (e.g. English), an observation that has been made in Nigerian primary schools (Oyetunde, 2002). These factors are more likely to account for low literacy rates apparent not only in Kenya, but also in other developing societies. Oyetunde states that the unfortunate consequence of this situation is that many children are dropping out of school. In 1999 the Kenyan primary school completion rate was only 63% (Worldbank Group, 2003). Further, according to the 2002 national Kenya Certificate of Primary Education (KCPE) results, only 57 percent completed the compulsory eight years of primary school education (Daily Nation, 2002).

Ineffective literacy instruction programmes can lead to nationwide illiteracy problems that are almost insurmountable. In fact, for the 57% who completed primary schooling in 2002, the national average score in English was only 40% (34% in writing composition and 47% in reading and grammar). These are all

below average scores. According to UNESCO (2000a) the illiteracy rates in Kenya (for 15 years and over) were about 23% in 1995 and 18% in 2000 (refer to figure 2 for 2000 values). Further, the illiteracy rates for females were about 31% and 24% in 1995 and 2000 respectively, while for the males they were about 15% in 1995 and 11% in 2000. This indicates that, although the illiteracy rates are dropping, the illiteracy levels for girls remain consistently higher than the national average. Indeed, there are twice as many girls as boys that are illiterate.

While other variables such as social, cultural, emotional, environmental and economic conditions may be partly responsible for these results, instructional procedures are very likely to account for the largest proportion of the contributing factors. In any case, both education and socio-economic factors form a vicious cycle. Commenting on educational issues in Kenya, for example, Okombo (2003) says, "The flip side to lack of education for poor families is that they will not free themselves from the vicious cycle of poverty. The opportunities for progress get diminished and poverty increases, and begets poverty" (Daily Nation, 2003). This is consistent with international findings. When levels of reading achievement were compared, it was found that the more affluent the country, the higher was the overall reading achievement. Further, at age 14, students from developing poorer countries had achievement levels about 4 years below those of 14 year-olds in developed countries (Thorndike, 1973). There is therefore, a need for an effective literacy instructional program that can prevent literacy problems that are inherent in many developing societies.

Summary

The reading research literature supports instruction in the English language that includes a strong phonological base. The relative importance of phonological skills in reading developmental processes cannot be underestimated. While there are many sources of information (cues) that children use to recognise English written words, studies show that, for L2 learners, it is the phonological skills that primarily transfer across languages (Durgunoglu et al., 1993; Geva et al., 1993; Gottardo et al., 2001; Muljan et al., 1998; Verhoeven & Aarts, 1998). Therefore, it

is necessary that instructional procedures for the teaching of reading in multilingual contexts include such skills.

The critical issue is that children in multilingual contexts who may be learning a second or a third language (which more often becomes the medium of instruction) are provided with instruction using L1 approaches. The fact that they are learning another language places these children at high risk of reading failure. The problem is compounded by the fact that most of the native languages, especially in Africa, have little or no accompanying teaching material. Since the evidence suggests that instruction in word level strategies is helpful in overcoming these handicaps, the challenge is to change, modify and/or improve the classroom literacy instruction to this effect. It is on this challenge that the aims of this study are based.

Aims of the Study

This study aims to examine some of the instructional approaches that teachers use when teaching reading in English language in Kenyan lower primary schools. The extent to which the instructional programmes in reading are sensitive to the two identified stages of reading, namely word recognition and reading comprehension, will also be investigated. As noted earlier, an effective reading programme is one that would take word recognition as a foundation and reading comprehension as a higher order skill. The study also hopes to explore how the Kenyan teachers' instructional approaches relate to the outcome measures of children's reading, and reading-related tasks including phonological awareness, alphabetic coding/ word recognition and comprehension skills.

Additionally, the study will examine children's word identification strategies, including an attempt to find out whether the children's preferred word identification strategies influence their performance on reading and reading related measures. In exploring these issues, the study hopes to bring to the fore important research issues that can be further pursued.

Research Questions

1. To what extent do teachers in Kenyan lower primary schools use combined (word-based and text-based) approaches when teaching reading in English?

2. To what extent do teachers' literacy instructional approaches, correlate with children's reading and reading related outcome measures?

3. Is there a higher correlation between language measures and reading comprehension than between word recognition skills and reading comprehension?

4. To what extent do Kenyan primary school children transfer their first language orthographic literacy skills to second language orthography?

5. To what extent do children in Kenyan lower primary schools use word-based strategies in identifying difficult or unfamiliar words when reading in English?

6. Do Kenyan primary school girls perform better than boys in reading and reading related measures?

CHAPTER 3

METHODOLOGY

Introduction

There are at least three approaches that teachers can use when instructing children in reading. These approaches are either context-based, word-level based, or mixed (a combination of context-based and word-level strategies). The aim of the study was to determine which of these approaches the Kenyan lower primary (Year 1 to Year 3) teachers preferred. Further the study sought to find out which of these approaches was most effective for L2 literacy acquisition in early years of schooling. Another aim of the study was to determine whether it was word recognition skills or L2 oral ability that strongly influenced L2 reading comprehension.

Method

Sample and Design

While most readers would more likely use a combination of strategies to identify many unfamiliar words when reading, the current study investigated the preferred word identification strategies of a group of Kenyan lower primary school children. To find out what strategies these children used in recognising words in their early years of schooling (Year 1 to Year 3), as they learn to read in English, a cross-sectional study (information collected at one point in time) was adopted. The selected time was the second term (May to early August of 2002 school year). This design was adopted as the study was interested in tracing L2 literacy developmental trends from Year 1 to Year 3.

The Kibwezi division in Makueni district in Kenya is a rural, semi-arid region, with a population below average in socio-economic levels. A large proportion of Kenyans (nearly 75 percent) live in rural areas. A random sample of

30 children per school: 10 Year 1, 10 Year 2 and 10 Year 3 was selected. This gave a total sample of 150 participants. However, two year three students were withdrawn from the study due to absences, leaving a total of 148 pupils in the study.

In Kenya, children commence school at the age of six. Officially, the academic year begins in January and ends in mid-November. All children (new entrants included) commence school in January, with no new entrants enrolling during the year. The classes are, therefore, relatively multi-age (See table 1 for mean ages of the year groups). The academic year is divided into 3 terms; term 1, January - March, term 2, May to early August, and term 3, September - mid November. The study was carried out during the second term 2002.

Table 1

Mean Chronological Ages (in months) of the Year Groups as of June 2002

	Year 1 (n=50)	Year 2 (n=50)	Year 3 (n=48)
Mean	77.70	91.08	105.00
S.D	3.98	4.45	3.73

The National Policy of Education in Kenya (Ministry of Education, 1995a) determines that native (local languages), national (Kiswahili), and official (English) languages are concurrently taught as subjects in the curriculum from year one to three. Beyond this very elementary level of schooling, English becomes the medium of instruction for all other subjects and a separate language subject in the curriculum, while Kiswahili is taught as a compulsory examinable subject up to high school. Notably, all languages have the same writing system, since they use Latin alphabets. This implies that the participants in this study were exposed to other alphabetic orthographies other than English alphabetic orthography, although the study focused on English given its importance as a medium of instruction.

The teachers from each of the fifteen classes were also questioned regarding their instructional approaches in reading. The lower primary English syllabus has provided the learning activities for the four language skill areas of learning, namely listening, speaking, reading, and writing. This serves as a guide to teachers on what to focus on. Specifically, the learning activities for reading skills in Year 1 include: identifying letter sounds, reading and understanding simple charts and pictorial books, compiling and reading scrap picture books, playing simple reading games, and naming the letters of the alphabet. More learning activities are added for Year 2 readers. These include reading sentences from substitution tables, using pictorial dictionaries, and identifying sounds of letters and sounds of groups of letters. In Year 3, scanning and practising words using phonics, and context are added as extra learning activities for reading. The above learning activities indicate that the classroom instruction in reading would mainly be context-based and teachers use word level strategies as children move from Year 1 to Year 3. For example, it is only in Year 3 that children practise words using phonics. Teachers are also more likely to use code-switching (orally switching from one language to another) during instruction because of the rudimentary English oral language skills of their pupils. In fact these children engage literacy activities in English in a limited English proficiency environment.

Materials

The assessment tasks used in the current study were designed for English first language learners. This was necessitated by the fact that recent studies with bilingual and ESL learners, have suggested that universal cognitive and linguistic factors, such as phonological awareness, working memory, orthographic knowledge, and speed of lexical access, are involved in reading skills acquisition for both L1 and ESL children (Bruck & Genesee, 1995; Durgunoglu et al, 1993; Geva & Siegel, 2000; Limbos & Geva, 2001). Limbos and Geva, for example, in their study of assessment of L2 students at risk of reading disability, noted that reading norms do not exist for L2 speaking children. Other studies have established that research on L2 children's reading is limited in scope and quantity (Garcia, 2000). This is also the current situation in Kenya. The nation is young,

having gained independence in 1963 (Crystal, 1997) and therefore there is heavy reliance on L1 literature for guidance in instruction.

Tasks given to the children included the Peabody Picture Vocabulary Test (PPVT), a Letter Identification Task, a Sound Matching Task, a Clay Word Reading Test, a Burt Word Reading Test, a Pseudoword Reading Task, an Invented Spelling Task, a Phoneme Segmentation Task, and the Neale Analysis of Reading Ability (Accuracy and Comprehension subtests). Teachers were also asked to rate children according to an English oral language proficiency rating scale that was provided. A simple questionnaire that investigated children's word identification strategies was also administered. The preferred approaches that the teachers used when teaching children to read unfamiliar words, was also obtained via questionnaires and interviews. These data were taped for later analysis and verification.

English Oral Language Proficiency Rating Scale

The teachers were asked to rate each child's English oral language proficiency using a specially designed scale. Teachers were asked to circle one number representing the child's level of proficiency in the language. The rating scale ranged from 1 to 5 where 1 represented those with very low English proficiency, and 5 for those with good command of the language (see Appendix A).

Peabody Picture Vocabulary Test (PPVT)

The revised form M of the PPVT (Dunn & Dunn, 1981) was used to provide an estimate of each student's general verbal ability by measuring receptive vocabulary. The children were asked to choose which one of four pictures corresponded to a test word spoken aloud by the tester. Standardized scoring procedures were used.

Letter Identification Task

A letter identification task was given to Year 1 children only. Children were required to give the name or sound of 26 upper case and 28 lower case letters,

two of which appeared in varying fonts (i.e., a, ɑ, g, and g). Scoring was based on the number of letters correctly identified by name or sound (see Appendix B).

Sound Matching Task

The sound matching task was an adaptation of a task developed by Bryant, Bradley, Maclean and Crossland (1989). This task, which was given to Year 1 and 2 children, comprised two parts: an onset matching task, and a rime-matching task. In the onset matching task, each child was asked to indicate which two of three orally presented words sounded the same 'at the beginning' (e.g. hair, pin, pig). In the rime matching task, each child was asked to indicate which two of three orally presented words sounded the same "at the end" (e.g. snail, nail, boot). For both tasks a series of practice items was included and picture support was provided for each test item, in order to reduce memory load. Scores for the sound matching task comprised the total number correct for the onset matching task (maximum = 9) plus rime matching task (maximum=9) giving a maximum possible score of 18 (see Appendix C).

Clay-Words list

Context free word identification ability was assessed by means of a combination of Forms A, B, and C of the Ready to Read Word Test (Clay, 1985). The test comprised 45 words selected from the most frequently occurring words in the 12 'little' books of the New Zealand Ready to Read Series. The test was administered to Year 1 and 2 children. Scoring was based on the number of words read correctly by each child (see Appendix D).

Burt Word Reading Test

The Burt Word Reading Test, New Zealand Revision (Gilmore, Croft, & Read, 1981) was also given to Year 2 and 3 children to assess context free word identification ability. It is a standardized test in which children are presented with a list of 110 words of increasing difficulty and asked to look at each word carefully and read it aloud. Testing continued until 10 successive words were read incorrectly or not attempted. Scoring was based on the number of words read correctly.

Invented Spelling Task

An invented spelling task was also administered to Year 2 and 3 children. The children were asked to write 18 words that were read aloud by the tester, first in a sentence, then in isolation. The 26 letters of the alphabet were displayed across the top of the children's response page to assist with the spelling task. Each word that the children wrote down received a score from 1 to 4. Maximum points were awarded for correct conventional spellings. Three points were awarded if all the sounds in the word were presented with letters, although unconventionally (e.g. kik for kick, fil for fill, sid for side). Two points were awarded if more than one phoneme (but not all) was represented with phonetically related or conventional letters (e.g. sd for side, lup for lump). One point was awarded where the initial phoneme was represented with the correct letter (e.g. f for fat). The total number of possible points was 72 (see Appendix E).

Pseudoword Reading Task

An adapted version of a pseudoword-decoding task developed by Richardson and DiBenedetto (1985) was used to measure knowledge of letter sound patterns of children in Year 2 and 3. Thirty monosyllabic pseudowords were presented in the form of a game in which the children were asked to try and read the "funny sounding names of children who live in far away lands." The pseudowords were presented in order of increasing difficulty, ranging from simple consonant - vowel - consonant patterns (e.g. jit, med, dut) to blends, digraphs, and vowel variations (e.g. prew, thrain, froice). Two practice items with corrective feedback were given followed by the 30 test items with no corrective feedback. When the child incorrectly pronounced an item, the mispronunciation was recorded using the pronunciation key provided. The items were scored according to the total number of sounds pronounced correctly in each item, provided the sounds in the item were blended into a single syllable. The total number of possible points for sounds was 101 from 30 word items (see Appendix F).

Phoneme Segmentation Task

A Phoneme segmentation task was given to Year 3 children. This involved a modified version of a phoneme counting task developed by Tunmer, Herriman and Nesdale (1988). The children were required to use counters to represent the

sounds in orally presented pseudowords of varying length. The task was presented in the form of a game in which the children were asked to identify the sounds in "funny sounding names of children who live in far away lands." One demonstration item was given (sif), followed by four practice items with corrective feedback (u, iv, vi, slif).

There were 24 test items altogether in this test: 4 single phoneme sounds (short vowels), 8 two-phoneme syllables (4 VC syllables and 4 CV syllables: the latter were transposed versions of the former), 8 three-phoneme syllables (4 CVC syllables that were constructed by adding a different consonant to the beginning of each of the 4VC syllables, and 4 CVC syllables that were constructed by adding the same consonant to the ends of the 4 CV syllables), and 4 four-phoneme syllables (2 CCVC syllables and 2 CVCC syllables). Scoring was based on the number of items correctly segmented, giving a total possible score of 24 (see Appendix G).

Neale Analysis of Reading Ability

The accuracy and comprehension subtests of the Neale Analysis of Reading Ability, Revised (Neale, 1988) were administered to Year 2 and 3 children. This provided measures of accuracy for recognising words in connected text and reading comprehension ability. The children read aloud a series of short passages that were graded in difficulty. Asking them to answer some comprehension questions after every passage tested children's comprehension. For both accuracy and comprehension standardized scoring procedures were used.

Children's Reported Word Identification Strategy Task

Information about the children's word identification strategies was obtained by asking each child the following question: "When you are reading on your own and come across a word that you don't know, what do you do to try and figure out what the word is?" The children's responses were coded according to whether reference was made to the use of word-based strategies, or text-based strategies. Examples of word-level strategies included "go through all the letters", "name the alphabets loudly", "sound the letters in the word." Examples of text-based

strategies were "try to guess", "have a look at the picture", "ignore and read on", and "try to remember the word." Non-responses to this question were also noted (see Appendix H).

Teacher Interview

An interview session was conducted with all the teachers in the fifteen classes. The purpose of the interview questionnaire was to investigate general reading organisational issues including: reading timetables, lesson frequency, progress monitoring procedures, reading approaches, and resources. Similarly the teachers' thoughts or theories that influence their practice in teaching reading were also briefly investigated (see Appendix I).

The Reading Error Scenario Task

The fifteen teachers were also given a written task that investigated their preferred word identification strategies. The teachers were presented with examples of six different reading error scenarios and they were required to write their preferred initial prompt that they would use to teach children to identify the particular target error (see Appendix J).

The passages containing the target error scenarios were taken from standard reading texts used in the regular classrooms in Kenyan primary schools. Each teacher also had a copy of the target sentence with the reading error scenario and they were required to write their three prompts next to the relevant error. In one example, the text read 'One day the elephant and the tortoise were in the forest'. The teachers were told that the 'reader' read totes instead of tortoise, and they were asked to write down their three prompts that they would use with the reader. The prompts were later categorised according to whether they focussed on context or word-level cue sources.

The Reading Error Categories

Because readers tend to make different types of reading errors, examples of different categories were included in the task (see Table 2 for sections of text containing the target error words).

Category A errors included either nil responses (i.e. no verbal response from the reader) or a minimal response such as the initial letter only. Three subtypes of scenarios were presented for category A errors. The first scenario involved the target (error) word appearing at the end of the sentence (e.g. Mrs Ogre lived in the village). Here, the reader made no attempt to read any part of the target word village. The second scenario involved the word appearing in the sentence so that more words followed (e.g. "I look beautiful!" she said when she looked in the mirror). The reader was able to correctly identify the initial letter sound only. The third error scenario involved the error appearing in the middle of the sentence. The reader was unable to identify the word despite having read the word that is nearly similar to the target word (e.g. But she saw two legs with a lot of green hair, and two feet with fourteen toes).

Category B involved the reader giving a non-word response for a target word, totes for tortoise. This type of response usually involves accurate letter sound identification of some parts of the word.

Category C errors involved the reader choosing real word substitutions, for example, lion for leopard, and stops for spots, although the latter substitution doesn't make sense in the sentence.

The text chosen for this task was from a series of Kenya Institute of Education (KIE) publications commonly used in the local primary schools (Ministry of Education- Kenya, 1995b). The text was from Progressive English Book 2 for Year 2 pupils. Usually the text has several units each with a short story and pictures relevant to the story. The first three examples (village, beautiful and feet) were taken from Unit 6, the fourth (tortoise) from Unit 7 and the other two (leopard and spots) from Unit 8. The actual presentation of the task involved reading through the passages with teachers and addressing the error type in the specific sentence. For example, the first error, Mrs. Ogre lived in the village, the reader is unable to read the target word village. The teachers were asked to record their three prompts before proceeding with the passage.

Table 2

Text Selections showing error words (underlined)

Text Selected	Error Category
Mrs Ogre lived in the <u>village</u>	A
She was a bad Ogre. Everyday she went to town to look for little children to eat. One day she had a good idea. She put on a dress and a scarf to hide her face.	
B_____ "I look <u>beautiful</u>!" She said when she looked in the mirror	A
But she saw two legs with a lot of green hair. She saw two f<u>eet</u>, but she saw fourteen toes.	A
<u>Totes</u> One day the elephant and the tortoise were in the forest	B
<u>Lion</u> The elephant was brown, the tortoise was brown, the leopard was brown, and the zebra was brown.	C
<u>Stops</u> So the tortoise made beautiful black spots on the coat of the leopard	C

Teacher Preferred Approaches for Word Identification

To determine teacher's preference for the teaching approaches in reading, whether they use word-level approaches, context-based approaches or mixed approaches (both word-level and context-based approaches), two interview questions were used: (1) How do children learn to read? (2), How should children be taught to read? The two questions were used to investigate the methods that teachers emphasised in their classroom practice when instructing children to identify unfamiliar words. The methods were categorised either as word-based, context-based, or mixed. Further, the error scenario task was analysed. The first step involved determining the type of prompts teachers preferred for each error scenario. Since teachers wrote three prompts for each error scenario, only the first

prompt was initially considered for categorisation and the second and third prompts were only considered if the first prompt was neutral. The number of times a teacher used either context-based or word level prompts was recorded. For example, if a teacher used context-based prompts for five error scenarios, and one word-level prompt, this was recorded to indicate five times under context-based prompts and once under word-level prompts. Some prompts were categorised as neutral because of the limited learning opportunities they were likely to elicit from the reader. Examples of neutral prompts included, teacher telling the word or instructing the reader to "think harder" or "look harder".

Finally, teachers were classified as either using context, word-level or mixed approaches, based on the possible classification outcomes from both interview and error scenario categories (see table 3 for possible classification outcomes).

Table 3

A classification criterion for possible outcomes for teacher instructional approaches based on interview task categories and error scenario prompts responses

	Teacher interview task analysis		
	Word-based methods	Context-based methods	Mixed Methods
More word-based prompts	Word-based approaches	Mixed approaches	Mixed approaches
More context-based prompts	Mixed approaches	Context-based approaches	Mixed approaches
Equal number of prompts for word-based and context-based prompts	Word-based approaches	Context-based approaches	Mixed approaches

(Row label for the left axis: Teacher error scenario prompts analysis)

For example, a teacher who preferred word-based methods (from the interview task results), and had more word-based prompts in the error scenario task, was

classified as using word-based approaches. Similarly, a teacher who favoured context-based methods, but had more word-based prompts was classified as using mixed approaches. It is clear from the table of possible outcomes, that first, teachers categorised as using mixed methods from the interview task, were classified as using mixed approaches irrespective of their responses in error scenario prompts. Secondly, the teachers who were categorised as using context-based approaches had either equal or more context-based responses in error scenarios. Thirdly, teachers categorised as using context-based methods were classified as using mixed approaches if they had more word-level responses in error scenario prompts (see table 4 for classification of teachers' preferred approaches). As noted, no teacher used word-level approaches exclusively.

Table 4

Teachers' preferred instructional approaches

| Year Level | Written task analysis | | Interview Task | Teacher approaches |
	Context-based	Word-level		
1	4	1	Context	Context
1	1	5	Mixed	Mixed
1	3	3	Context	Context
1	5	0	Context	Context
1	4	2	Context	Context
2	3	2	Mixed	Mixed
2	6	0	Context	Context
2	1	5	Mixed	Mixed
2	4	0	Context	Context
2	4	2	Context	Context
3	3	3	Mixed	Mixed
3	1	4	Context	Mixed
3	0	4	Context	Mixed
3	3	3	Mixed	Mixed
3	0	6	Mixed	Mixed

Note. Neutral prompts are not recorded in the table.

Procedure

The study was carried out in the second term (May to early August 2002). Each child was individually tested in a quiet withdrawal place in his/her respective school. All the tests were generally not timed, and the total testing time for each child largely depended on the task being given but on average the testing lasted for 10 to 20 minutes. The English oral language proficiency rating scale was provided to the teachers at the beginning of the study for them to observe and assess children's level of proficiency as they rated them. The rating sheets were collected after the children had completed all other tasks.

The interviews and teaching prompts exercise for the 15 teachers were carried out after all the children had been tested. Each teacher was interviewed separately in a quiet withdrawal place in his/her school. The interviews were audio taped for later analysis and clarification. On average, the interview task lasted 30 to 40 minutes. The teaching prompts task was undertaken with every 3 teachers in their respective school together. Every teacher was, however, expected to do his/her own task without eliciting views from others. The task took around 2 hours. Table 5 shows the timeframe for the study.

Table 5

Summary of assessments as a function of year group and time of testing

Assessment	Year Group	Week 1	2	3	4	5	6	7	8	9	10	11
PPVT	(1)	✓	-	-	-	-	-	-	-	-	-	-
	(2)	✓	-	-	-	-	-	-	-	-	-	-
	(3)	✓	-	-	-	-	-	-	-	-	-	-
Letter identification	(1)	-	✓	-	-	-	-	-	-	-	-	-
Sound Matching	(1)	-	✓	-	-	-	-	-	-	-	-	-
	(2)	-	✓	-	-	-	-	-	-	-	-	-
Clay words	(1)	-	-	✓	-	-	-	-	-	-	-	-
	(2)	-	-	✓	-	-	-	-	-	-	-	-
Burt words	(2)	-	-	✓	-	-	-	-	-	-	-	-
	(3)	-	-	✓	-	-	-	-	-	-	-	-
Psuedoword Reading	(2)	-	-	-	✓	-	-	-	-	-	-	-
	(3)	-	-	-	✓	-	-	-	-	-	-	-
Invented Spelling	(2)	-	-	-	-	✓	-	-	-	-	-	-
	(3)	-	-	-	-	✓	-	-	-	-	-	-
Phoneme Segmentation	(3)	-	-	-	-	-	✓	-	-	-	-	-
Neale analysis accuracy & Comprehension	(2)	-	-	-	-	-	-	✓	✓	-	-	-
	(3)	-	-	-	-	-	-	✓	✓	-	-	-
Children's word Identification Strategies	(1)	-	-	-	-	-	-	-	-	✓	-	-
	(2)	-	-	-	-	-	-	-	-	✓	-	-
	(3)	-	-	-	-	-	-	-	-	✓	-	-
Teacher interview Questionnaire	(1)	-	-	-	-	-	-	-	-	-	✓	-
	(2)	-	-	-	--	-	-	-	-	-	✓	-
	(3)	-	-	-	-	-	-	-	-	-	✓	-
Teacher prompts for Word identification Strategies	(1)	-	-	-	-	-	-	-	-	-	-	✓
	(2)	-	-	-	-	-	-	-	-	-	-	✓
	(3)	-	-	-	-	-	-	-	-	-	-	✓

CHAPTER 4

RESULTS AND DISCUSSION

Fifteen teachers were given an error scenario task and a questionnaire task that aimed at categorising them according to the teachers' preferred literacy instructional approaches. This chapter begins with a discussion of the results from the questionnaire, followed by the error scenario prompts analysis and the allocation of the teacher instructional approach categories. The prediction was that mixed or varied instructional approaches (those that included word-level and text-based skills) were likely to be more effective in literacy related outcome measures of the participating children than context-based approaches.

Language, reading and reading related tasks in English language were administered to 148 children. The aim was to investigate the pattern of relationships among the language and literacy measures in each year, and the developmental trends in literacy acquisition across the years. It was predicted that word identification measures would consistently influence reading comprehension performance more than the language measures in all years. A further discussion will therefore involve concurrent correlations of language, reading and reading related measures in each year; literacy developmental trends across the years; effects of different instructional approaches that children received on literacy development; and path analyses of the language and literacy measures.

Teachers' Instructional Approaches and Students' Performance

Results from the questionnaire

Data were obtained from the fifteen teachers relating to their qualifications, teaching experience, reading progress assessment procedures, teaching resources and instructional approaches. Results in table 6 show that all teachers had P1 certificates, a two-year qualification requirement for lower primary (i.e.,

Year 1 to Year 3) teachers in Kenya. The average teaching experience was 13.4 years with a range of 2 to 32 years.

Table 6

Teacher qualifications, experience, and year level

Teacher	Highest Qualification	Teaching experience (years)	Year-level (1-3)
1	P1	3	1
2	P1	12	1
3	P1	4	1
4	P1	32	1
5	P1	26	1
6	P1	2	2
7	P1	14	2
8	P1	12	2
9	P1	27	2
10	P1	12	2
11	P1	3	3
12	P1	8	3
13	P1	9	3
14	P1	30	3
15	P1	7	3

The teaching of reading was not allocated any specific and separate time in the timetable. It was, therefore, taught alongside other English Language elements such as the formal study of sentence patterns and structures, including the use of verbs, adjectives and nouns. English lessons, in all classes were taken in the morning for 30 minutes between 8.00am and 9.30am. Nine teachers preferred to have two lessons in a week exclusively for reading, while the other six chose to allocate some time within the English lesson, for approximately 15 to 20 minutes. This indicated that there was a wide variation and quality of reading

instruction that children received across years, with little attention given to the explicit teaching of specific reading-related instruction in English.

The main basis on which reading progress was assessed by the teachers was through teachers listening to children's oral reading of the standard texts. There was no evidence of the use of running records in any classroom. Alphabet letter name knowledge was taught and assessed in year one, and only two teachers (both Year 3), included the use of comprehension questions as a further measure of reading progress. The teaching of vocabulary was undertaken by a number of teachers via activities that involved having the children match pictures of common items with their written word equivalents (e.g. house plus picture of a house). Some vocabulary extension tasks were also undertaken using words from the basal texts. Generally, resources were scarce, with the teachers relying mainly on the basal texts supplied by the Kenyan Ministry of Education. The main basal text was the New Progressive English series, while supplementary series included English Aid, Hello Children, Read with Us, New Friends. Children were also encouraged to orally practice using new words, and six teachers (from Year 2 and 3) mentioned the use of songs, poems and pronunciation tasks to help the children learn letter sounds. Such tasks included rhymes and tongue twisters. An example of a tongue twister pronunciation task included the following: 'Kantae can tie a tie, why can't I tie a tie like Kantae can tie a tie?' (New Progressive English Book 2, 1995, p. 34).

Error Scenario Prompts

To investigate the preferred teaching prompts that Kenyan primary teachers use to teach children to identify unfamiliar words when reading, the teachers were presented with a series of six "typical" reading error scenarios. Each error scenario was representative of the type of reading error that young children typically make when reading (see earlier description of the reading error scenarios for full detail). Since each of the fifteen teachers had six error scenarios, a total of 90 prompts were analysed. The results from the error prompts analyses are summarised in table 7.

The results indicate that for the Year 1 teachers, over half (i.e. 56.7%) of the prompts were context-based with only 36.7% recording word-level prompts. A common context based prompt included asking the child to try and guess the word, while a word-level prompt included, asking the child to say the letters of the alphabet in the word. The results for the Year 2 teachers show that 60% of the prompts were context-based and only 30% were word-level based. However, by Year 3, 66.7% of the teachers appear to have more preference for word-level prompts than context-based prompts (23.3%). Generally, the teachers in the current study appeared to use both context-based (46.7%) and word-level (44.4%) prompts when instructing children to read unfamiliar words. This finding is similar to Greaney's (2000) New Zealand study in which he also noted that while teachers did use a variety of prompts, they nevertheless favoured context-based prompts.

Table 7

Frequency and percentage for preferred prompts in error scenarios as a function of year   level.

Response Category	Year 1		Year 2		Year 3		Mean Total	
	N	%	N	%	N	%	N	%
Context-based prompts	17	56.7	18	60.0	7	23.3	42	46.7
Word-level prompts	11	36.7	9	30.0	20	66.7	40	44.4
Neutral Prompts	2	6.6	3	10.0	3	10.0	8	8.9
Total	30	100.0	30	100.0	30	100.0	90	100.0

Teacher Instructional Approach Categories

To confirm a teacher instructional approach category as being either "context-based", "word-level based" or "mixed" (i.e. using both word-level and context-based approaches), the teacher responses from the error response scenario tasks were compared with each teacher's interview answers to the question "How should children be taught to read?" (For a summary of the teacher

category allocations refer to table 4). Table 8 presents a summary of the teacher instructional approach categories as a function of year level. Because no <u>one</u> teacher clearly indicated a preference for purely word-level prompts in the error scenarios task and in the questionnaire, there were no teachers allocated to this category. However, a number of teachers indicated in their questionnaire that children should be taught to read using word-level strategies, but their error scenario prompts demonstrated in favour of context-based prompts. These teachers were categorised as "mixed".

Results indicate that slightly more than a half (53.3%) of the teachers preferred to use mixed approaches (a combination of word-level and context-based approaches). Of these 62.5% taught the year 3 classes. There was a significant progressive increase in the use of mixed approaches across the years with 25% in year 1, 40% in year 2, and 100% in Year 3 using mixed instructional approaches. On the other hand, there was a significant drop in the use of context-based strategies from 75% in Year 1, to 60% in Year 2, to nil in Year 3. This trend was consistent with syllabus guidelines (Ministry of Education – Kenya, 1995a) where the learning activities in reading for year 1 and 2 were primarily context oriented, while in Year 3, the learning activities included an emphases on teaching words using phonics approaches. In Year 3, for example, children learned common consonant blends such as <u>st</u> in words like <u>stand, stamp,</u> and <u>star</u> and this occurred in both regular reading contexts and in isolated lesson contexts.

Table 8

<u>Frequency and Percentage for preferred teaching approach as a function of year level</u>

Approach Category	Year 1		Year 2		Year 3		Mean Total	
	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>
Context-based	4	80.0	3	60.0	0	0.0	7	46.7
Mixed	1	20.0	2	40.0	5	100.0	8	53.3
Total	5	100.0	5	100.0	5	100.0	15	100.0

Instructional Approaches and Students' Performance

Table 9 presents the frequency and percentage of students receiving a mixed methods or context-based approach to literacy instruction as a function of year level. This data indicates a clear shift from a largely whole word approach in first year to a totally mixed method approach in third year. This shift most likely reflects the change in instructional emphasis from holistic strategies in early grades to more analytical strategies that are specified in the Kenya National English Syllabus Curriculum for literacy instruction in the early years (see earlier discussion).

Table 9

Frequency and percentage for each instructional approach to teaching reading as a function of year level

Instructional approach	Year 1		Year 2		Year 3	
	N	%	N	%	N	%
Mixed methods approach	10	20.0	20	40.0	48	100.0
Context-based approach	40	80.0	30	60.0	0	0.0
Total	50	100.0	50	100.0	48	100.0

Table 10 presents the means and standard deviations for all language and literacy measures as a function of instructional approach and year level (for Year 1 and 2 only as all the Year 3 children received a mixed methods approach). Of particular interest are the results for second year, which show that children who received instruction that included an emphasis on teaching word-level skills and strategies, performed significantly better on all literacy and literacy-related measures than children who did not receive such instruction. These findings suggest that literacy instruction was more effective when word-level skills and strategies were introduced earlier rather than later. Other studies (e.g., Geva & Wade-Woolley, 1998) found that phonological processing skills play a more important role in early stages of literacy development rather than later. These

results suggest that children who receive mixed or varied literacy instructional approaches (where word-level skills are included) are likely to benefit more than those receiving any one approach only.

Table 10

Means, standard deviations, and t-tests for language and literacy measures by instructional approach and year level

Measures	Mixed Methods Approach			Context-based Approach			t-test	
	N	M	SD	N	M	SD	df	t
Year 1								
Oral language	10	1.90	.74	40	2.25	.87	48	1.17
Receptive vocabulary	10	41.70	4.76	40	36.92	7.04	48	2.02*
Letter identification	10	49.10	3.03	40	44.48	9.48	48	2.60**
Sound matching	10	12.20	3.65	40	12.55	3.25	48	.30
Word identification (Clay)	10	6.60	7.73	40	6.70	5.43	48	.05
Year 2								
Oral language	20	2.50	.76	30	2.30	.79	48	.89
Receptive vocabulary	20	51.95	10.32	30	49.67	8.47	48	.86
Sound matching	20	16.60	2.16	30	13.93	3.47	48	3.34**
Word identification (Clay)	20	32.75	14.66	30	24.60	11.41	48	2.21*
Word identification (Burt)	20	30.20	13.69	30	20.67	12.30	48	2.57**
Letter-sound knowledge	20	63.80	29.03	30	40.30	27.64	48	2.89**
Preconventional spelling	20	46.10	14.60	30	35.27	10.81	48	3.01**
Neale Reading Accuracy	20	16.75	7.44	30	12.50	6.97	48	2.06*
Neale Reading Comprehension	20	3.30	2.43	30	2.17	1.90	48	1.85*

*p<.05 **p<.01

Concurrent Correlations

Presented in tables 11, 12 and 13 are the intercorrelations, means and standard deviations for measures taken in Year 1, Year 2, and Year 3, respectively. In the first year both letter identification and word identification correlated significantly with oral language, suggesting that knowledge of the language of instruction is helpful in learning to identify letters and words. Only letter identification correlated significantly with receptive vocabulary. As might be expected, letter identification and sound matching each correlated significantly with word identification, although the magnitude of the latter correlation (.25) was low, perhaps because instruction at this stage focuses mostly on learning frequently occurring words (such as those presented in the Clay Ready to Read Test) as whole word visual patterns (i.e., sight words). Phonological sensitivity (as measured by sound matching in first year) would be expected to play a greater role when children begin employing more analytical approaches in identifying words. Overall, the magnitudes of the significant correlations among first year measures tended to be rather weak, most likely because performance on some of the measures (most notably word identification) approached floor levels.

Table 11

Intercorrelations, means, and standard deviations for Year 1 measures

Measures	1	2	3	4	5
1. Oral language		.12	.37**	.03	.38**
2. Receptive vocabulary (PPVT)			.37**	.16	.18
3. Letter identification				.20	.43**
4. Sound matching					.25*
5. Word identification (Clay)					
M	2.18	37.9	45.4	12.5	6.7
SD	.85	6.9	8.8	3.3	5.9
Maximum Score	5.00	175.0	54.0	18.0	45.0

Note. N = 50. * p<. 05 ** p<. 01

In second year all correlations were significant except that between oral language and word identification (Clay). A possible reason for why receptive vocabulary correlated significantly with sight word recognition of frequently occurring words (as measured by the Clay test), whereas oral language did not, is that general knowledge of the meanings of words may be particularly helpful in making holistic associations between the spoken and the written form of words. As expected the ability to detect sound sequences in spoken words (as measured by sound matching) correlated more highly with the ability to use mapping between subcomponents of written and spoken words (i.e., letter-sound knowledge and preconventional spelling) than it did with other measures. In turn, the alphabetic coding measures (letter-sound knowledge, preconventional spelling) correlated more highly with the word identification measures than did the other reading-related measures. Finally, both the alphabetic coding and word identification measures correlated more highly with reading comprehension than did the measures of oral language development (i.e., oral language and receptive vocabulary). The latter finding is consistent with the claim that word identification skills are relatively more important than oral language skills during early stages of learning to derive meaning from text, provided that oral language has developed beyond a threshold level (Tunmer & Hoover, 1992, 1993).

For the third year measures, all correlations were significant. As had occurred in second year, ability to detect sound sequences (which was measured by a different measure of phonological sensitivity in third year, namely, phoneme segmentation) correlated more highly with the alphabetic coding measures (letter-sound knowledge, preconventional spelling) than it did with any of the other measures. The alphabetic coding and word identification measures again correlated highly with reading comprehension, but not as highly as they did in second year. However, the opposite pattern was observed with the measures of language ability (oral language, receptive vocabulary). Both measures correlated more highly with reading comprehension in Year 3 than they did in Year 2. These results are similar to those reported in other studies (e.g., Hoover & Gough, 1990), where developmental changes were found in the relative contributions of word identification skills and oral language proficiency to variance in reading

comprehension, with word identification/ alphabetic coding skills accounting for more of the variance in the lower years and oral language ability for more of the variance in the upper years. Oral language ability appears to become more important at somewhat later stages of learning to read after children have begun to develop fluency in word recognition, and when children's reading materials have become more advanced in components of language that are common to both oral language and reading comprehension (i.e., semantics, syntax, pragmatics).

Table 12

Intercorrelations, means, and standard deviations for Year 2 measures

Measures	1	2	3	4	5	6	7	8	9
1. Oral language		.49**	.42**	.16	.39**	.28*	.41**	.28*	.26*
2. Receptive vocabulary (PPVT)			.27*	.48**	.39**	.49**	.61**	.41**	.34**
3. Sound matching				.38**	.48**	.49**	.62**	.46**	.36**
4. Word identification (Clay)					.64**	.76**	.68**	.73**	.69**
5. Word identification (Burt)						.83**	.75**	.77**	.77**
6. Letter-sound knowledge							.80**	.87**	.83**
7. Preconventional spelling								.75**	.67**
8. Neale Reading Accuracy									.93**
9. Neale Reading comprehension									
M	2.38	50.6	15.0	27.9	24.5	49.7	39.6	14.2	2.6
SD	.78	9.2	3.3	13.3	13.6	30.2	13.4	7.4	2.2
Maximum score	5.00	175.0	18.0	45.0	110.0	101.0	72.0	100.0	44.0

Note. N=50. *p< .05 **p< .01

Table 13

Intercorrelations, means, and standard deviations for Year 3 measures

Measures	1	2	3	4	5	6	7	8
1. Oral language		.44**	.60**	.67**	.48**	.47**	.44**	.45**
2. Receptive vocabulary (PPVT)			.62**	.46**	.47**	.39**	.52**	.42**
3. Phoneme segmentation				.66**	.69**	.72**	.63**	.58**
4. Word identification (Burt)					.63**	.57**	.67**	.70**
5. Letter-sound knowledge						.83**	.54**	.56**
6. Preconventional spelling							.62**	.64**
7. Neale Reading Accuracy								.94**
8. Neale Reading Comprehension								
M	2.73	58.3	14.3	37.4	83.6	49.0	22.8	5.2
SD	.84	10.3	3.5	11.5	16.8	10.5	9.2	2.8
Maximum score	5.00	175.0	24.0	110.0	101.0	72.0	100.0	44.0

Note. N = 48. *p<. 05   **p<. 01

Developmental Trends

The results presented in table 14 show significant differences between the means for each measure that was administered in two or more years. As expected, the children in higher years significantly outperformed the children in lower years on all reading and reading related measures. However, the developmental trends for the language measures were rather weak, especially that for oral language, where individual comparisons of cell means revealed a significant difference between first and third year only (Scheffe, $p < .05$). An analysis of individual scores on the oral language rating scale revealed that 19 of the 48 children in third year received a rating of 2 or below. Earlier research has shown that there is a monotonically increasing, parabolic relationship between oral language proficiency and reading achievement, suggesting that children must attain a threshold level of competence in the language being read before they can achieve substantial progress in reading comprehension performance (Tunmer & Hoover, 1992). Approximately 40% of the third year children appear to be below this threshold level of competence in English, and probably more.

Consistent with this suggestion are the age equivalents for receptive vocabulary and standardized reading measures based on monolingual English speaking norms. As shown in table 15, the Year 3 children were 3 years, 9 months below age level in their performance on the PPVT, but only 1 year, 2 months below age level on the Burt test. However, the children were 1 year, 9 months below age level on accuracy of reading words in connected text (as measured by Neale Reading Accuracy) and 2 years, 3 months below age level in reading comprehension (as measured by Neale Reading Comprehension). Generally, the children performed less well on measures of reading that required higher levels of competence in the language being read, with those in higher grades falling relatively more behind their English counterparts than those in lower grades, suggesting that the gap is likely to get wider at increasing year levels. This is similar to other international findings where the reading achievement levels for children from developing countries, at age 14, were about 4 years below those of 14 year-olds in developed countries (Thorndike, 1973).

Table 14

One-way analyses of variance of measures taken across year levels

Measure	Year 1 (N = 50)		Year 2 (N = 50)		Year 3 (N = 48)		ANOVA	
	M	SD	M	SD	M	SD	df	F
Oral language	2.18	.85	2.38	.78	2.73	.84	2,145	5.54*
Receptive vocabulary (PPVT)	37.88	6.88	50.58	9.23	58.33	10.30	2,145	66.24**
Sound matching	12.48	3.30	15.00	3.27	–	–	1,98	14.73**
Word identification (Clay)	6.68	5.87	27.86	13.29	–	–	1,98	106.22**
Word identification (Burt)	–	–	24.48	13.58	37.44	11.55	1,96	25.79**
Letter-sound knowledge	–	–	49.70	30.23	83.63	16.83	1,96	46.57**
Preconventional spelling	–	–	39.60	13.44	48.96	10.47	1,96	14.70**
Neale Reading Accuracy	–	–	14.20	7.39	22.81	9.21	1,96	26.16**
Neale Reading Comprehension	–	–	2.62	2.17	5.17	2.82	1,96	25.23**

Note. *p<.01

　　　　**p<.001

Table 15

Age equivalents for receptive vocabulary and reading measures based on
monolingual English-speaking norms

Measure[a]	Year 1 (N = 50)	Year 2 (N = 50)	Year 3 (N = 48)
Chronological age	6;6	7;7	8;9
Vocabulary age (PPVT)	3;9	4;5	5;0
Burt reading age	–	6;6	7;7
Neale reading age (accuracy)	–	6;2	7;0
Neale reading age (comprehension)	–	5;11	6;6

[a] Age expressed in years and months

A likely explanation for why the third year children performed reasonably well on the measures of context free word identification (i.e., the Burt test) is that their scores on the phonological processing measures (phoneme segmentation, letter-sound knowledge, preconventional spelling) were close to or well within the middle range of monolingual English speaking children in Year 3 (see Chapman, Tunmer, & Prochnow, 2001). This somewhat surprising pattern of results may in turn be due to the fact that in addition to having received reading instruction in English from school entry, the children received concurrent instruction in two other languages (Kiswahili, which is the national language, and Akamba, which is the native language), both of which use alphabetic orthographies that have many of the same letter-sound patterns as English orthography. This would explain why the children's alphabetic coding and word identification skills are more advanced than their reading comprehension skills (in English).

Evidence of transfer of alphabetic coding skills from other languages to English orthography comes from spelling errors that reflect letter-sound patterns not found in English orthography. Analysis of the miscues in the spelling task revealed that some children had predictable errors that were mainly additions of vowels at the

end of the words, based on their Kiswahili or Akamba phonemic and orthographic knowledge. A word like fill, for example, was spelt as fili, and the word bank had spelling error patterns such as banka, banki, or baniki (for more examples, see table 16). This is consistent with the findings from Fashola, Drum, Mayer, and Kang (1996) suggesting that children learning to spell in a L2 would temporarily rely on L1 phonological and orthographic processes to spell L2 words with unfamiliar phonemes and graphemes.

Table 16

Spelling miscues that depicted cross-language transfer for Year 2 and Year 3

	Year 2 N % 15 30	Year 3 N % 9 18.75
Target word	miscue word	miscue word
Fat	fati	fati
Fill	fili	filli, fili
Pop		popu
Bank	banka, banki, baniki	
Side	saidi	sadi, saindi
Meat	mit, mite, miti	mit, miti
Kick	kiki	kiki chichi
Hot	hoti	
Pack	paka, paki	paki, packi
Van		vani
Duck	daki, daka	
Jail	jili	
Cake	keki	keki
Tight	tait, taiti, tati	taiti

Approximately, 30% of second years and 18 % of third years had these typical cross-language errors. Therefore, a further prediction would probably be that if children are concurrently exposed to two or more alphabetic orthographies, more children in lower years would rely on the orthographic knowledge that they process first (mostly a L1 shallow orthography) to spell, and perhaps to read, unfamiliar L2 words, than higher years, since differentiation of orthographies would occur at increasing year levels.

Reported Word Identification Strategies

Presented in table 17 are the frequency and percentages for each response category of reported word identification strategies as a function of year level. In first year most of the children reported relying on text-based strategies (such as using picture cues) to identify unfamiliar words in text. However, at increasing year levels there was a clear shift towards using word-based strategies (such as sounding out letters of the alphabet), a shift that may in part reflect a change in the instructional emphasis in second and third year from using holistic strategies to more analytical strategies (Ministry of Education – Kenya, 1995a). In year 2, for example, the learning activities for reading skills included identifying sounds of letters and sounds of groups of letters, vocabulary development through using scrap picture books and pictorial dictionaries, and reading sentences from substitution tables. And by third year, children were encouraged to practice new words using phonics, and context. This means that there was more emphasis on analytical approaches instruction in Year 3 than in lower years, where emphasis was more on reading pictorial books and charts, compiling and reading scrap picture books to learn the names of the letters of the alphabet.

Table 17

Frequency and percentage for each response category of reported word
identification strategies as a function of year level

Response Category	Year 1		Year 2		Year 3	
	N	%	N	%	N	%
Word-based strategies	7	14.0	23	46.0	27	56.2
Text-based strategies	38	76.0	24	48.0	20	41.7
No response	5	10.0	3	6.0	1	2.1
Total	50	100.0	50	100.0	48	100.0

Table 18 presents the means, standard deviations and t-tests for the language and literacy measures as a function of reported word identification strategy and year level (children who provided no response to the question concerning their preferred word identification strategy were excluded from the analysis). Similar to findings reported by Tunmer and Chapman (2002), the children who used word-based strategies generally outperformed the children who used text-based strategies on all phonological processing and literacy measures, but not the language measures. The pattern was particularly strong in second year, but less so in third year, perhaps because the children's slow growth in English oral language efficiency was beginning to delay progress in reading despite the fact that the children appeared to have satisfactory word-level skills and tended to prefer using word-based strategies.

Table 18

Means, standard deviations, and t-tests for language and literacy measures by word
identification strategy group and year level

Measures	Word-based Strategies Group			Text-based Strategies Group			t-test	
	N	M	SD	N	M	SD	df	t
Year 1								
Oral language	7	2.86	.90	38	2.08	.78	43	2.36*
Receptive vocabulary	7	38.14	8.82	38	38.39	6.49	43	.09
Letter identification	7	50.00	1.41	38	44.26	9.68	43	3.46***
Sound matching	7	14.71	3.59	38	11.95	3.26	43	2.03*
Word identification (Clay)	7	12.14	6.44	38	6.34	5.39	43	2.54*
Year 2								
Oral language	23	2.48	.73	24	2.38	.82	45	.45
Receptive vocabulary	23	53.30	7.77	24	49.33	9.31	45	1.58
Sound matching	23	16.22	2.54	24	14.54	3.04	45	2.05*
Word identification (Clay)	23	34.83	9.04	24	22.96	13.91	45	3.48***
Word identification (Burt)	23	33.91	10.30	24	17.25	10.67	45	5.44***
Letter-sound knowledge	23	69.48	22.49	24	34.54	25.33	45	4.99***
Preconventional spelling	23	48.52	7.81	24	33.67	11.34	45	5.21***
Neale Reading Accuracy	23	18.57	5.23	24	11.08	7.02	45	4.16***
Neale Reading Comprehension	23	3.78	1.88	24	1.75	1.98	45	3.60***
Year 3								
Oral language	27	2.93	.82	20	2.55	.76	45	1.59
Receptive vocabulary	27	60.48	9.49	20	56.45	10.34	45	1.39
Phoneme segmentation	27	15.48	2.68	20	13.35	3.13	45	2.51*
Word identification (Burt)	27	41.19	11.43	20	33.30	9.75	45	2.49*
Letter-sound knowledge	27	88.48	11.23	20	81.00	12.74	45	2.13*
Preconventional spelling	27	51.00	8.33	20	48.55	7.37	45	1.05
Neale Reading Accuracy	27	23.81	8.61	20	22.20	9.75	45	.60
Neale Reading Comprehension	27	5.33	2.73	20	5.15	2.91	45	.22

*p<.05 **p<.01 ***p<.001

Path Analysis

To investigate further the relative contribution of word identification skill and oral language proficiency to variance in reading comprehension, path analyses of the second and third year data were carried out. Presented in table 19 are the standardized beta weights for regression equations with language factor score (combining oral language and receptive vocabulary) and word identification (as measured by the Burt test) as predictor variables and reading comprehension as the criterion variable for second and third year. The language factor score for oral language and receptive vocabulary accounted for 71.9% of the variance, and the factor loading for each measure was .85. At both year levels word identification made a strong, independent contribution to variance in reading comprehension but the language factor score did not independently influence reading comprehension performance. This finding suggests that word identification skills play a more important role than language skills in acquisition of reading comprehension skills in early years. These results are similar to those reported in other studies (e.g., Limbos & Geva, 2001; Tregar & Wong, 1984) where L2 oral ability failed to significantly influence the L2 reading comprehension in elementary grades, but did so in middle grades. On the other hand, word identification was found to significantly influence L2 reading comprehension more in lower grades than in higher grades. However, in monolingual English-speaking populations oral language skill makes an independent contribution to reading comprehension by second or third grade (e.g., Hoover & Gough, 1990; Tunmer, 1989). This pattern of results was not observed in the present study, most likely because the English oral language achievement of the participating ESL children was considerably lower in comparison to monolingual English-speaking children of similar age and year level (see earlier discussion).

Table 19

Standardized beta weights for regression equations with language factor score and word identification as predictor variables and reading comprehension as the criterion variable for second and third year

	Beta Weights	
Predictor Variable	Year 2	Year 3
Language factor score	.01	.07
Word identification	.77*	.66*
	$(R^2 = .59)$	$(R^2 = .50)$

*$p<.001$

Gender Differences

Table 20 presents the means and standard deviations for all language and literacy measures as a function of gender and year level. No significant differences between boys and girls were found on any of the measures taken. Until recently, it was widely thought that boys were much more likely to encounter early reading difficulties than girls largely because of the disproportionately higher number of boys relative to girls who were placed in remedial reading programmes. However, recent research has indicated that this difference was due more to school-based selection bias (based on boys classroom behaviours) rather than to boys performing more poorly than girls on measures of reading related skills and performance (Prochnow et al., 2001; Shaywitz et al., 1990).

On the other hand, these results also suggest that girls can achieve as well as boys in relation to literacy achievement, thereby challenging some cultural practices that have locked girls out of schooling system by denying them a chance to learn to read and write. According to Benson (2002), this should result in an improvement of African girls' school participation and performance, in terms of enrolment, retention and graduation. Some Kenyan communities have cultural beliefs and practices that have resulted in higher illiteracy rates among girls than boys, indeed higher than the

average national total (UNESCO, 2000a). The results presented in table 20 are consistent with these findings.

Table 20

Means and standard deviations for language and literacy measures by gender and year level

Measures	Boys			Girls		
	N	M	SD	N	M	SD
Year 1						
Oral language	32	2.09	.82	18	2.33	.91
Receptive vocabulary	32	37.84	7.12	18	37.94	6.64
Letter identification	32	44.97	9.37	18	46.17	7.77
Sound matching	32	12.75	3.48	18	12.00	2.97
Word identification (Clay)	32	6.13	5.62	18	7.67	6.32
Year 2						
Oral language	26	2.42	.76	24	2.33	.82
Receptive vocabulary	26	51.15	8.87	24	49.96	9.75
Sound matching	26	15.50	3.04	24	14.45	3.49
Word identification (Clay)	26	27.42	14.78	24	27.42	14.78
Word identification (Burt)	26	26.38	15.64	24	22.42	10.89
Letter-sound knowledge	26	50.54	31.50	24	48.79	29.45
Preconventional spelling	26	40.62	13.26	24	38.50	13.83
Neale Reading Accuracy	26	13.96	7.30	24	14.46	7.64
Neale Reading Comprehension	26	2.73	2.20	24	2.50	2.19
Year 3						
Oral language	28	2.75	.75	20	2.70	.98
Receptive vocabulary	28	60.25	10.47	20	55.65	9.67
Phoneme segmentation	28	14.79	2.88	20	13.65	4.23
Word identification (Burt)	28	36.43	9.69	20	38.85	13.89
Letter-sound knowledge	28	85.71	12.78	20	80.70	21.30
Preconventional spelling	28	49.50	8.25	20	48.20	13.17
Neale Reading Accuracy	28	23.46	8.23	20	21.90	10.59
Neale Reading comprehension	28	5.07	2.54	20	5.30	3.23

Summary

Teachers' approaches to literacy instruction are important because they determine the skills that are emphasised as children learn to read. A teacher who prefers context-based approaches, for example, will emphasise text-based skills such as guessing, or substituting with a word that makes sense. On the other hand, a teacher who prefers word-based approaches is more likely to emphasise learning letter-sound correspondences and the teaching of spelling patterns awareness and analogies. It was, therefore, necessary to include an investigation of the teachers' literacy instructional approaches. The results revealed that slightly more than a half (53.3%) of the teachers preferred to use mixed approaches (both word-level and context-based strategies). The rest favoured context-based approaches, with no one teacher using word-based approaches exclusively. The preference for mixed approaches increased at each year level so that by Year 3, all teachers favoured mixed approaches. More importantly, children who received mixed approach instruction performed significantly better on all literacy and literacy-related measures than children who did not receive such instruction.

Fluency in reading has been characterised as resulting from a combination of word recognition and comprehension skills (Gough & Tunmer, 1986). Further, it has been argued that word recognition processes are more effective than meaning making processes. This is particularly so for L2 children (Birch, 2002), who may not always have an adequate vocabulary base to engage in substitution or contextual guessing skills when reading. Therefore, it is necessary that literacy instruction for L2 learners such as those in the current study incorporate both word identification and language skills that develop vocabulary, syntactic, and semantic knowledge for reading comprehension. Indeed, the results from the current study showed that word recognition skills independently influenced reading comprehension performance, but language skills did not. Although the language skills had a stronger relationship with reading comprehension in the upper years, it appears that the language developmental levels for these children were still too low to significantly make an independent contribution to variance in reading comprehension.

CHAPTER 5

CONCLUSIONS

The main aims of the current study were to: (1) determine which literacy instructional approach, context-based, word-level or mixed (a combination of context-based and word-level strategies) would be more effective for beginning L2 learners in a developing society; (2) trace the literacy developmental trends from Year 1 to Year 3; (3) determine which of the two variables, word identification skills and L2 oral ability would strongly influence L2 reading comprehension. Other aims included: (1) to determine what strategies children preferred to identify unfamiliar words; (2) to establish whether children used their L1 orthography to spell L2 unfamiliar words; and (3) to find out whether there were significant differences between boys and girls in any of the measures given to the children. To investigate the first question, teachers were given an error scenario task and a questionnaire task. To investigate the other aims, language, literacy and literacy-related tasks were administered to the children in Year 1, Year 2 and Year 3.

Key Findings

Results from literacy instructional approaches investigation revealed two significant findings. First, the data indicated that slightly more than a half (53.3%) of the teachers preferred to use mixed or varied instructional approaches when teaching children to identify unfamiliar words. Further, there was a significant progressive increase in the use of mixed approaches across the years so that by Year 3 all the teachers preferred to use mixed approaches. This trend was consistent with syllabus guidelines (Ministry of Education – Kenya, 1995a) where the learning activities for Year 1 and Year 2 were generally context-oriented, but by Year 3 word-level strategies were included as children practised words using a combination of context and phonics methods. Second, the data also revealed that

children who received varied instructional approaches performed significantly better than those who did not receive such an instruction. The pattern was particularly strong for children in Year 2 suggesting that varied instructional approaches (where word-level strategies are included) may be introduced earlier rather than later.

Results from the language, literacy and literacy-related measures indicated several findings. First, there was a stronger relationship between word identification skills and reading comprehension in Year 2 than in Year 3, but the opposite pattern was observed with measures of language ability. This finding suggested that oral language ability becomes important at somewhat later stages of learning to read after children have begun to develop fluency in word recognition. This finding is consistent with previous studies (e.g., Hoover & Gough, 1990) indicating that word identification skills would account for more of the variance to reading comprehension in the lower than in the upper years of primary schooling.

A second finding indicated that (as would be expected), children in upper years significantly outperformed children in lower years on all reading and reading-related measures. The developmental trends for language measures were, however, weak, with a significant difference only between first and third year oral language measures. This suggested that a number of children appeared to be below a threshold level of competence that has been found to be critical if children are to achieve sustainable progress in reading comprehension performance, in the language being read (Tunmer & Hoover, 1992). This finding was confirmed by the results from age equivalents for receptive vocabulary, and the standardised reading measures of the Burt word test, and the Neale analysis of reading ability (accuracy and comprehension sub-tests), based on L1 English speaking norms. The results revealed that, generally, the children were performing below age level on all measures, with the gap getting wider at increasing year levels.

However, Year 3 word identification and phonological processing measures were close to or well within the middle range of L1 English speaking third graders (see Chapman, Tunmer & Prochnow, 2001). A possible explanation for this somewhat surprising pattern of results comes from the evidence of transfer of

alphabetic coding skills from other languages (i.e., Kiswahili) to English orthography. The influence of L1 orthography to reading and spelling in L2 has been reported in other studies (Durgunoglu, 1998: Fashola et al., 1996).

Further, results from children's reported word identification strategies' task showed that, at increasing year levels, there was a clear shift towards using word-based strategies. This shift may partially be due to a change in instructional emphasis in Year 2 and Year 3 from using holistic strategies to more analytical strategies (see Ministry of Education – Kenya, 1995a). Of importance, similar to other findings (e.g., Tunmer & Chapman, 2002), the children who used word-based strategies generally outperformed those who used text-based strategies on all phonological processing and literacy measures, but not the language measures. The pattern was rather weak in Year 3, suggesting that the children's slow growth in English oral language ability was probably beginning to delay progress in reading achievement.

Because of this low L2 oral ability, path analyses showing the relative contribution of oral language proficiency and word identification skill, for both Year 2 and Year 3, revealed that language measures failed to make an independent significant contribution to variance in reading comprehension for both years. However, word identification skills made a strong independent contribution to variance in reading comprehension at both year levels, suggesting that word identification skills appear to play a more important role than language skills in acquisition of reading comprehension skills, in early years. Tregar and Wong (1984) also found that L2 oral ability influenced L2 reading comprehension in middle grades but not in lower grades.

Finally, with regard to gender differences, results indicated that there were no significant differences between boys and girls on all measures. This suggested that, given a chance, girls could achieve as well as boys, thereby challenging cultural practices that deny girls literacy acquisition opportunities. This means that particularly for Kenya the percent illiteracy rates that are twice those of boys (see UNESCO, 2000a) could significantly be reduced. Similarly, although there is no

formal remedial reading in Kenya, these results also support the view that the disproportionately higher number of boys relative to girls placed in remedial reading programmes, may be accounted for by other factors other than poor reading performance only (see Shaywitz, et al., 1990).

Summary

Results from this study confirmed the prediction that varied literacy instructional approaches for the teaching of word identification strategies are more effective than context-based approaches for L2 beginning learners. Further, the results suggest that a combination of approaches may be introduced earlier rather than later. It is, therefore, important that probably from Year 1 teachers employ mixed literacy approaches (where word-level strategies are included). This may increase the children's word recognition skills, which are necessary for both vocabulary development and general comprehension. The results showed that L2 oral ability was very low and did not make an independent contribution to variance in reading comprehension, even by Year 3. However, word identification skills made a significant independent contribution to variance in reading comprehension, suggesting that it is word identification skills that strongly influences L2 reading comprehension. It could also be argued that L2 oral ability would be more likely to develop as a consequence of word identification ability. And since there were no significant differences between boys and girls in performance on all language and literacy measures, girls need to be provided with equal literacy development opportunities as the boys in Kenya.

Limitations of the Study

A criticism of the current research design may be that the teacher sample (i.e., 15) was rather small and not randomly selected from a wide pool of English language teachers in the Kenyan primary schools. It could therefore be assumed that, had a large sample of randomly selected teachers been used, the outcome patterns of literacy instructional approaches may have been different, probably with some teachers using word-based approaches. Teachers' participation in the study

was determined on the basis of the children they taught, who were randomly selected from different schools. However, it was necessary to investigate the relationship between teachers' preferred strategies and approaches and their children's performance on various reading-related tasks. As a result this gave rise to a large sample of children and a small sample of teachers. Nevertheless, the study has indicated that teachers' approaches have an effect on children's literacy performance.

A related criticism involves the use of error scenario and questionnaire tasks to investigate teacher instructional approaches. It would be far better to make classroom observations and see teachers' lesson organisations specifically during reading time. This may need to be done over several occasions.

Another criticism of the study may relate to the use of a cross-sectional design. A major weakness with this design is that, at each year level, children may have different learning experiences such that the children in Year 3 may have had different learning experiences when they were in Year 1 and 2 than what the current Year 1 and 2 children were experiencing. The study was based on the assumption that, since the English national curriculum is centralised, children at each year level received similar instruction.

Another criticism of the current study is that it did not investigate the language reading and reading-related performances of children in the other languages (i.e., Kiswahili and Akamba). Other studies (e.g., Geva et al., 1993) have established that there is a relationship between children's word identification skills in L1 and word identification skills in L2. However, the analysis of spelling miscues revealed that children in this study used their L1 orthography to spell some L2 words.

A further related problem associated with cross-language transfer, is the failure of this study to investigate home-based literacy experiences. It could be argued that, although children enter school with low literacy abilities in all the three languages (English, Kiswahili, Akamba), Kiswahili and Akamba may be more advantaged than English, since parents are more likely to engage their children in

literacy activities of the languages that they are more familiar with. However, the study was conducted in rural areas where the literacy levels of the community were generally low.

Finally, the study failed to include other important factors such as reading self-concept and behavioural differences that are associated with reading acquisition. This aspect would have been particularly important to determine whether there were significant differences between boys and girls in self-perceptions.

Suggestions for Further Research

- The current study was primarily interested in finding out how teachers' literacy instructional approaches related to children's performance in reading-related measures. Future research could concentrate on literacy instructional methods to accommodate a wider sample of teachers as well as apply classroom observation methods.

- The study adopted a cross-sectional design due to the time constraints. Future research may adopt a longitudinal study to investigate reading developmental trends of the same sample for the three elementary years.

- Future studies may also include experimental designs, where different groups of children are instructed using the three possible approaches: word-based, context-based, and mixed, followed by comparisons to experimentally establish which approach is the most effective, for what year level of children.

- The current research centred on English language since it is the language of education in Kenya. Future replications may include other languages to establish whether children can read and write in their own native languages, and the extent to which native language influences L2 reading development.

- The students used in the study were in lower primary classes (Year 1 to Year 3). Future research may include upper primary children, in order to establish the stage at which children differentiate orthographies and stop making cross-language spelling errors.

- A significant factor associated with the development of reading skills (that was not included in the study) is the child's evolving self-system (Chapman, Tunmer, & Ryan, 1997). Future replications may include measures of self-system factors such as self-concept, self-efficacy, and self-worth.

Implications for Educational Practice

The findings from this study have relevance for lower primary teachers in multilingual contexts, although the study involved teachers and students from one native language in rural Kenya. This is because children, who are learning to read in an alphabetic orthography are likely to benefit from a mixed or varied literacy instructional approach. Further, the findings suggest that children should be encouraged to use word-based skills when confronted by a difficult word. This strategy is particularly useful in multilingual contexts, since it is the phonologically based skills that generally transfer across languages (Durgunoglu et al., 1993), thereby facilitating the learning of other alphabetic languages. It appears that L2 reading development depends in part on L1 word identification skills. An implicit implication, therefore, is that, for alphabetic orthographies, children should be provided with an approach that includes word-level skills not only in L2 but also in L1 (and any other language) literacy instruction.

Furthermore, according to this study, word-level skills should be introduced earlier rather than later. An advantage in introducing word-level skills early is that this will facilitate the children's word recognition skills, which are necessary for comprehending the text. Proficient readers are those who identify printed words efficiently, and automatically. According to Pressley (1998), the inability to recognise words automatically interferes with strategic functioning above the word level,

because use of active comprehension strategies requires a great deal of short-tem capacity.

Perhaps the children in this study were functioning only at word level even after nearly three years of schooling because word recognition skills were introduced later rather than earlier. In fact, it was word identification skills that made a significant independent contribution to variance in reading comprehension at both Year 2, and Year 3 levels. The language measures consistently failed to make an independent contribution to variance in reading comprehension at both grades. This means that there is need also for greater focus on L2 oral development, which has been found to depend in part on word recognition ability. This implies that, for English L2 children, word recognition skills are the foundation upon which language measures and meaning construction processes develop, and it is therefore necessary that these skills be introduced earlier if these children are to become skilful readers.

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APPENDICES

English oral Language Proficiency Rating Scale

Student's Name: _____   **Student Number:** _____

School Name: _____   **Teacher Name:** _____

Instructions: Please read the criteria numbered below and circle the number corresponding to the statement that most accurately describes the student's level of proficiency in English.

(1)   Understands very little speech, except for a limited number of items frequently used in the classroom or social settings (e.g. greetings); requires simplification, and/or much use of gestures.   Speech is generally characterised by laboured production, incomplete sentences, and/or excessive number of errors.

(2)   Understands some adult or peer group speech spoken at normal rate, but often requires simplification of speech, frequent repetition, or rephrasing.   Is unable to participate with facility in any but very familiar, routine conversations.   Speech is frequently uneven, hesitant and fragmented.

(3)   Understands most adult or peer group speech spoken at a normal rate, but occasionally demonstrates lack of, or only partial, understanding.   Speech is characterised by occasional errors in grammar, some groping for words, and at times, hesitancy and unevenness in production.

(4)   Understands essentially everything spoken at a normal rate except for certain idiomatic phrases or conventionalised usage of the language.   Uses the language fluently for the most part, and is able to participate successfully in all school-related and peer-group conversations. Speech, while smooth, effortless, and generally without error, contains some sound qualities and grammatical structures which suggest nonnativeness.

(5)   Understands everything in both classroom and peer group speech which would usually be expected of native speakers of the same age.   For all practical purposes, uses the language like a native speaker of the same age.   Speech in all school-related and peer-group conversations is smooth, effortless and native-like in accuracy.

Instructions for Letter Identification Task

To introduce the task ask the child, "What do you call these?" If the child hesitates, start with the first letter of his name, and then go to the first line. Pointing to each letter, ask the child, "What is this one?" If the child does not respond, ask the following questions:

1.   Do you know its name?

2.   What sound does it make?

Then moving to other letters: "What is this? And this?" Point to every letter in turn working across the lines. Use a marking card if necessary. If the child does not know the **name** of the letter, be sure to ask if s/he knows what **sound** the letter makes. The item is scored as correct if the child knows **either** the name of the letter **or** the sound it makes.

LETTER IDENTIFICATION SCORE SHEET

Student No. _____

Name: _____ **School:** _____ **Test Score:** _____

Recorder: _____ **Date:** _____

	A	S		I.R.		A	S		I.R.
A					a				
F					f				
K					k				
P					p				
W					w				
Z					z				
B					b				
H					h				
O					o				
J					j				
U					j				
					a				
C					c				
Y					y				
L					l				
Q					q				
M					m				
D					d				
N					n				
S					s				
X					x				
I					i				
E					e				
G					g				
R					r				
V					v				
T					t				
					g				
				TOTALS					

Recording:

A. Alphabet response: tick

S. Letter sound response: tick

IR Incorrect response: Record what the child says.

Total Score [ ]

A	F	K	P	W	Z
B	H	O	J	U	
C	Y	L	Q	M	
D	N	S	X	I	
E	G	R	V	T	
a	f	k	p	w	z
b	h	o	j	u	a
c	y	l	q	m	
d	n	s	x	i	
e	g	r	v	t	g

Instructions for Sound Matching Task

I. Rime Matching Task

Before the trials begin, ask the child if they know the nursery rhyme Jack and Jill and recite the first two lines. "Do you know the nursery rhyme **Jack and Jill**? Jack and Jill went up the _____ ? Yes, **hill**. **Jill, hill**, they sound the same. They rhyme. Can you tell me another word that sounds like **hill**? Yes, good." If the child fails to respond, give them an example (e.g., **fill**). "Does **pill** sound like **hill**? Yes, **hill, pill**. Does **boat** sound like **hill**? No, they don't, do they? **Boat, hill** do not sound the same." Use additional examples until it is established that the child knows that rhyming words sound the same and that non-rhyming words sound different. "Now we're going to play a game about words that sound the same, about words that rhyme. I'm going to say three words. I want you to listen carefully and tell me which two words sound the same." The tester gives the first practice item (sail, nail, boot) and points to the corresponding picture as s/he says each word clearly. When the child responds, make sure s/he says the two words when pointing to the corresponding pictures. If the child hesitates, repeat the item. If the child still does not respond, encourage them to have a guess. Praise the child for a correct response. "Yes, sail and nail sound the same." Provide corrective feedback if the child responds incorrectly. "No, **sail** does not sound like **boot**. **Sail** sounds like **nail**, **Sail, nail**, they sound the same. They rhyme. **Sail, boot**, they don't sound the same. They don't rhyme." Give the second practice item (**cat, bell, hat**) and corrective feedback, if necessary. Then proceed to the test items, but do not give corrective feedback, only general encouragement. Repeat items if the child hesitates. When recording the child's response on the answer sheet, circle the item that they do not select. A point is given for each correct response.

II. Onset Matching Task

"The next game is a bit different. Some words sound the same at the beginning. Can you say the first sound of your name?" Provide help, if necessary. And then say, "Can you think of any other words that begin with the same sound as your name?" Provide prompts, if necessary. "Here are some other words that sound the same at the beginning, **fun, fish, face**. Each word starts with a **fff** sound. Can you think of any other words that have a **fff** sound at the beginning like **fffun, fffish** and **ffface**?" The tester draws the initial sound out a bit for emphasis. "How about **fun** and **fast**? Do these words sound the same at the beginning?" The tester asks the child about other word pairs with identical onsets (e.g., **fuss, feet; sit, song**) and also about word pairs with different onsets (e.g., **sad, fuss; sit, night**). "Do **fuss** and **feel** start with the same sound? How about **sad** and **fuss**?" Give corrective feedback if necessary. "No, **sssad** and **fffuss** do not start with the same sound. **Sad** starts with a **sss** sound and **fuss** starts with a **fff** sound." Use additional examples until it is established that the child knows that some word pairs start with the same sound but other pairs do not. "Now we're going to play a game about words that sound the same at the beginning. I'm going to say three words. I want you to listen carefully and tell me which two words sound the same at the beginning." The tester gives the first practice item (**cat, car, hen**) and points to the corresponding picture as s/he says each word clearly. When the child responds, make sure s/he says the two words

when pointing to the corresponding pictures. If the child hesitates, repeat the item. If the child still does not respond, encourage them to have a guess. Praise the child for a correct response.

"Yes, **Cat** and **car** have the same sound at the beginning." Provide corrective feedback if the child responds incorrectly. "No, **cat** and **hen** do not sound the same at the beginning. **Cat** and **car** sound the same. **Cat**, **car**, they both start with /k/." Give the second practice item (**hair**, **pin**, **pig**) and corrective feedback, if necessary. Then proceed to the test items, but do not give corrective feedback, only general encouragement. Repeat items if the child hesitates. When recording the child's response on the answer sheet, circle the item that they do not select. A point is given for each correct response.

Sound Matching Task

Student's Name: _____

School: _____

Date Tested: _____

Tester: _____

Student Number: _____

Rime Matching Score: _____

Onset Matching Score: _____

Total Score: _____

I.	Rime Matching Task			II	Onset Matching Task		
	sail	nail	**boot**		cat	car	**hen**
	cat	**bell**	hat		**hair**	pin	pig

1.	**sock**	tray	hay	1.	bed	**tree**	bell
2.	peg	**cot**	leg	2.	**box**	tray	train
3.	fish	dish	**book**	3.	coach	**farm**	coat
4.	**bus**	arm	farm	4.	dog	doll	**sun**
5.	sand	hand	**cup**	5.	hand	hat	**book**
6.	hen	**car**	pen	6.	man	**fish**	mat
7.	gun	sun	**tap**	7.	**nail**	peg	pen
8.	wall	**dog**	ball	8.	toad	toast	**girl**
9.	**paw**	boat	goat	9.	**rain**	bag	bat

Score: _____

Score _____

WELCOME
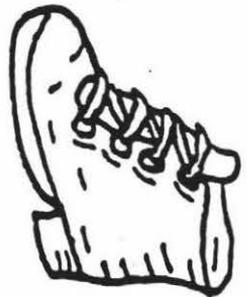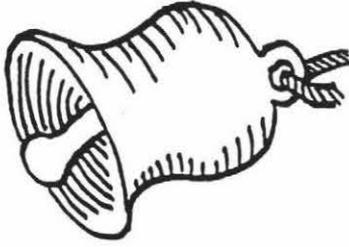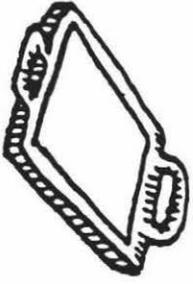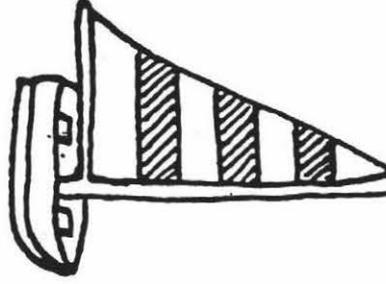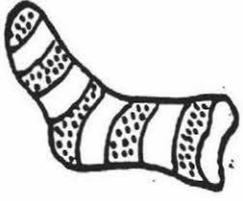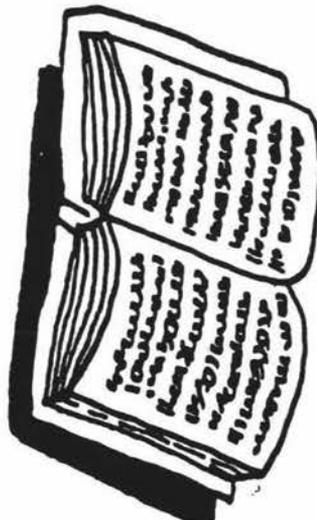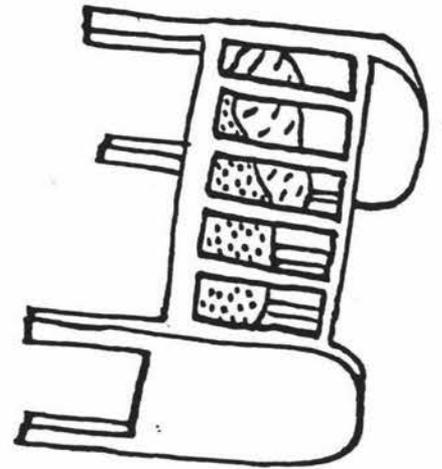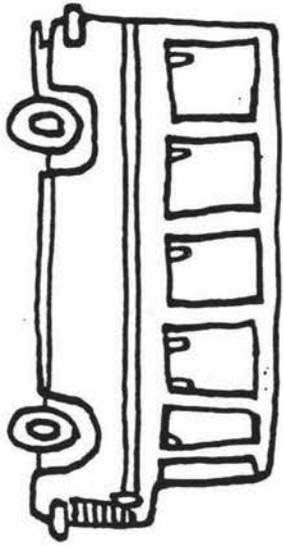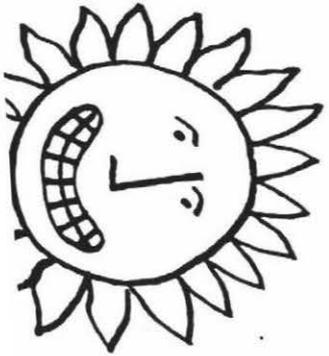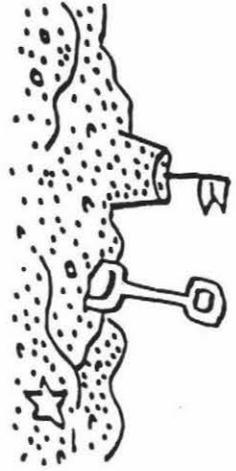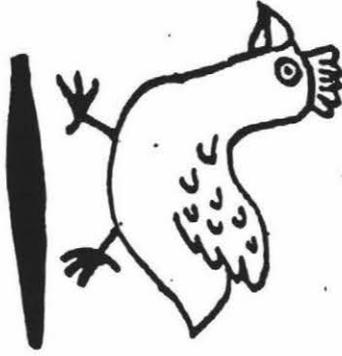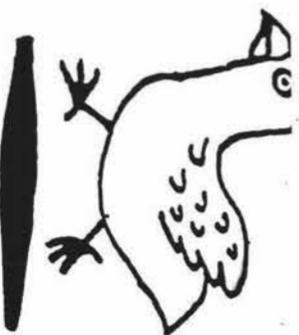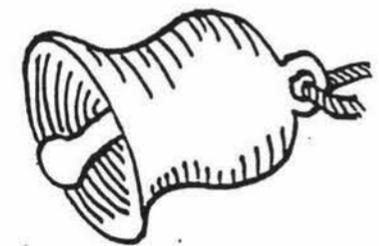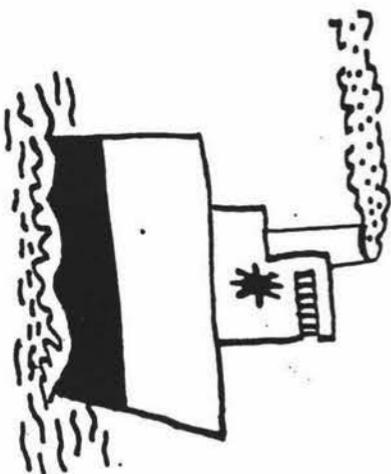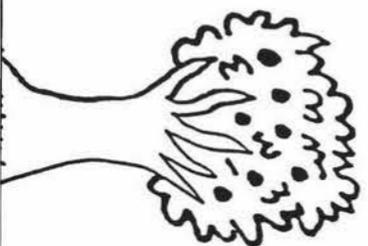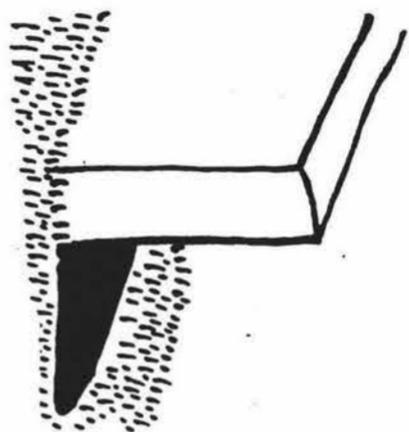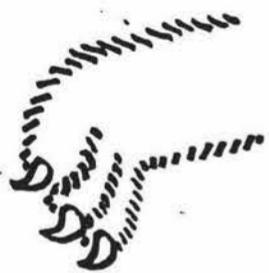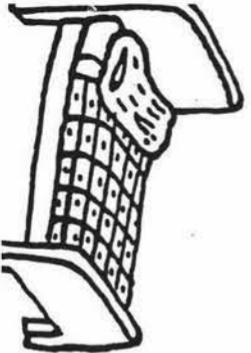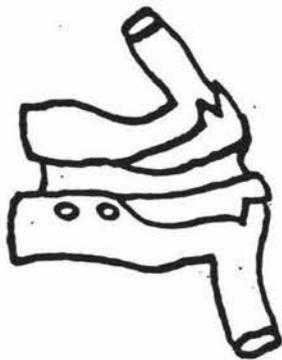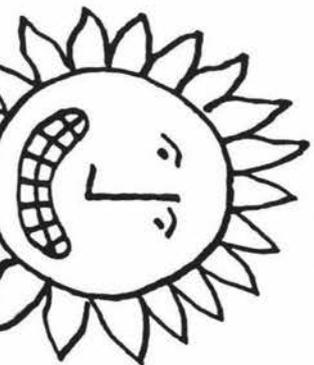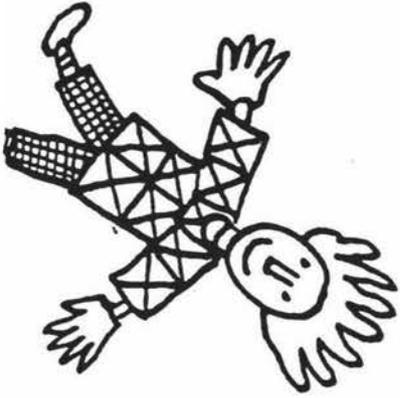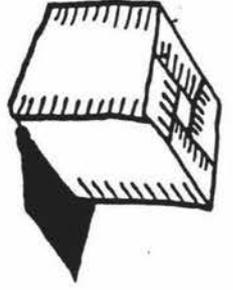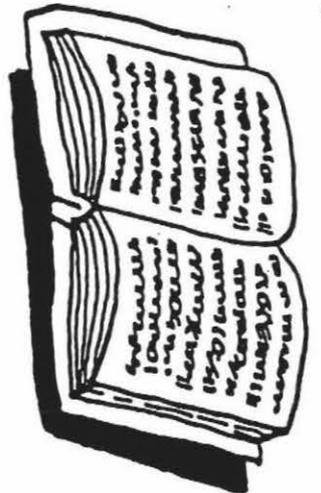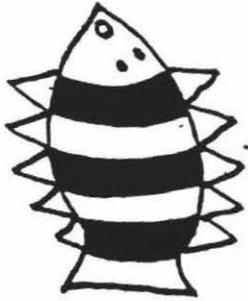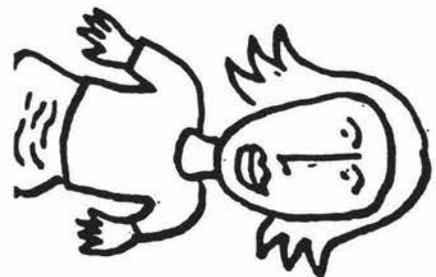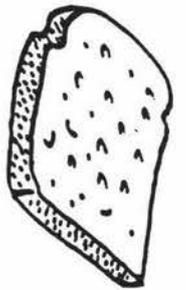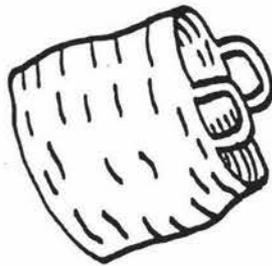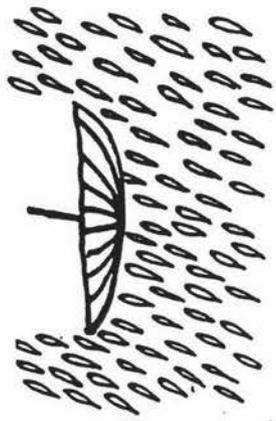
Ready to Read Word Test

Introduce the task by saying to the child, "Here are some words I'd like to see if you can read." Expose each of the 15 rows one at a time by placing a sheet of paper over the remaining items and moving the sheet downward to expose each new row of words. Pointing to each word in the row, ask the child, "Can you read this word?" Continue through all 15 rows.

Do not help the child with any of the words and do not give corrective feedback. Give only general encouragement. Guessing should be encouraged. A point is given for each word read correctly.

Self corrections are counted as correct. Record all incorrect responses. When a nonword or partial word response is given, record the child's pronunciation according to the following code:

PRONUNCIATION KEY

Sound Symbol	Example	Sound Symbol	Example	Sound Symbol	Example
a	lag	ō	tone	ĕr	tow'er
e	flesh	ū	cute	k	cute
i	hit	ōō	threw	z	vis'it
o	jog	ŏŏ	foot	s	pen'cil
u	nut	oi	choice	j	sau'sage
ā	fake	ou	loud	th	thin
ē	preach	ô	raw	th	then
ī	hide	ə	a woké	ks	ex plode'

NOTE: Common consonant sounds are represented by the letters themselves (e.g., n as in nut; f as in fed).

WORD TEST SCORE SHEET

Name: _____   School: _____

Recorder: _____   Date: _____

Record Incorrect Responses

LIST A	LIST B	LIST C
I	and	Father
Mother	to	come
are	will	for
here	look	a
me	he	you
shouted	up	at
am	like	school
with	in	went
car	where	get
children	Mr	we
help	going	they
not	big	ready
too	go	this
meet	let	boys
away	on	please

I	and	Father
Mother	to	come
are	will	for
here	look	a
me	he	you
shouted	up	at
am	like	school
with	in	went
car	where	get
children	Mr	we
help	going	they
not	big	ready
too	go	this
meet	let	boys
away	on	please

Instructions for Invented Spelling Task

Introduce the task by saying to the child, "Here are the letters of the alphabet." Point to the letters of the alphabet printed across the top of the response sheet. Then say to the child, "I'm going to say a word, then put the word in a sentence. I want you to write that word on the black line. Just do the best you can. Okay, lets try this one." Say the target word aloud, read the corresponding sentence to the child, and repeat the target word. Then ask the child to write it down. Do not help the child with any of the words and do not give corrective feedback. Give only general encouragement. Go slowly. Let the child have time to think. If the child fails to write anything down in response to an item, mark a line through the space (so that the child will be forced to move to the next line) and say, "Okay, let's try another one." If the child fails to give any response to six consecutive items, the session can be terminated. All remaining items are scored as incorrect.

Two scoring procedures are used. The first is simply the total number of correct spellings. In the second procedure, each item is scored according to the following scale:

0   No response or a random string of letters

1   The initial phoneme is represented with the correct letter (e.g., **f** for **fat**) or with a phonetically related letter (e.g. **k** for **cake**), and may be followed by a random string (e.g., **fmj** for **fat**); or a single letter response that represents some salient part of the word other than the initial phoneme (e.g., **I** for **fill**, **k** for **duck**, or **e** for **meat**).

2   More than one phoneme represented but not all. Must be represented with phonetically related or conventional letters. May include intrusions (e.g., **sd** for **side**; **jl** for **jail**; **fjt** for **fat**; **lup** for **lump**; **me** for **meat**).

3   Two or more letters capturing all of the word's sounds "unconventionally" (e.g., **kik** for **kick**, **fil** for **fill**, **sid** for **side**, **met** for **meat**, **pak** for **pack**).

4   Correct conventional spelling.

Note: Sometimes it is difficult to determine what letter(s) the child is trying to write. For example, reversals are common. It is therefore advisable to ask the child to write down the word and then spell it aloud. This response can then be entered on the response sheet under "spelling response".

Invented Spelling Task

Student's Name:	_____	Student Number:	_____
School:	_____	Total Correct:	_____
Date Tested:	_____	Total Points:	_____
Tester:	_____		

....

				Spelling Response	Points (0 to 4)
1.	**fat**	My dog is too fat.	fat	_____	_____
2.	**fill**	Please fill my glass.	**fill**	_____	_____
3.	**lump**	He has a lump on his head.	**lump**	_____	_____
4.	**pop**	Don't pop the balloon.	**pop**	_____	_____
5.	**bank**	She put her money in the bank.	**bank**	_____	_____
6.	**side**	He painted the side of his house.	**side**	_____	_____
7.	**hay**	Cows like to eat hay.	**hay**	_____	_____
8.	**meat**	Dogs like to eat meat.	**meat**	_____	_____
9.	**kick**	She likes to kick the ball.	**kick**	_____	_____
10.	**hot**	It was a hot day.	**hot**	_____	_____
11.	**pack**	He put his book in the pack.	**pack**	_____	_____
12.	**yell**	Never yell in the classroom.	**yell**	_____	_____
13.	**van**	His father has a big van.	**van**	_____	_____
14.	**duck**	She gave the duck some bread.	**duck**	_____	_____
15.	**jail**	Robbers go to jail.	**jail**	_____	_____
16.	**bit**	The cat bit her finger.	**bit**	_____	_____
17.	**cake**	The children ate some cake.	**cake**	_____	_____
18.	**tight**	His shoe is too tight.	**tight**	_____	_____

a b c d e f g h i j k l m n o p q r s t u v w x y z

1 _____

2 _____

3 _____

4 _____

5 _____

6 _____

7 _____

8 _____

9 _____

10 _____

11 _____

12 _____

13 _____

14 _____

15 _____

16 _____

17 _____

18 _____

Student's Name: _____

Student Number: _____

Instructions for Pseudoword Naming Task

"Today I'm going to show you some funny sounding names. These are the names of children who live in a far away land. Let's pretend that we are going to visit these children and want to learn to say their names the way they do. You can read their names only if you sound them out. Remember, do not try to make them into real words. Let's try this one." The tester presents the first practice item and encourages the child to sound it out. If the child fails to respond correctly, or fails to respond after 5 to 10 seconds, the tester demonstrates how to sound out the item. "This letter makes an e sound and this letter makes a z sound, so the name is e - z, ez." The tester presents the second practice item and, if necessary, demonstrates how to sound out the item. "OK, now let's see if you can play the game. I'm going to show you some names and I want to see if you can tell me how to say them." The tester encourages the child to sound out each name. If the child makes a real word response, the tester reminds him/her that the right answer cannot be a real word. If the child reads a name in syllables (e.g., *juh-i-tuh*), the tester says to the child: "OK, what name does that make?" Throughout the test session the tester gives positive feedback of a nonspecific nature when appropriate - "nice", "good job", etc. However, corrective feedback should not be given. If the child fails to attempt **any** item on two consecutive word lists, the session can be terminated. All remaining items are scored as incorrect.

When an item is incorrectly pronounced, the tester records the child's mispronunciation according to the following code:

PRONUNCIATION KEY

Sound Symbol	Example	Sound Symbol	Example	Sound Symbol	Example
a	lag	ō	tone	ẽr	tow'er
e	flesh	û	cute	k	cute
i	hit	ōō	threw	z	vis'it
o	jog	ŏŏ	foot	s	pen'cil
u	nut	oi	choice	j	sau'sage
ā	fake	ou	loud	th	thin
ē	preach	ô	raw	th	then
ī	hide	ə	a woké	ks	ex plode'

NOTE: Common consonant sounds are represented by the letters themselves (e.g., n as in nut; f as in fed).

The correct pronunciation(s) and common errors for each of the items of the pseudoword naming task are given below:

Word	Correct Pronunciation(s)	Common Errors
jit	jĭt	jīt, jet
med	mĕd	mĭd, met
dut	dŭt	do͞ot
wob	wŏb	wŭb, wod
pag	păg	peg, pāj
thut	thŭt, t͡hŭt	tho͞ot, thrut
sath	săth, săt͡h	sāth, sat
glick	glĭk	klĭk
blesh	blĕsh	blĭsh, bles
brop	brŏp	brōp, prop
mide	mīd	mĭd
fute	fūt, fo͞ot	fut, fo͞ot
voze	vōz	vō zē
pake	pāk	pa kē
sone	sŏn	swun, zŏn, sŏ nē
clave	klăv	krăv
chove	chōv	cho͞ov, shuv
grake	grāk	krăk
trobe	trŏb	throb, tro͞ob
drime	drīm	drem, dĭm
roud	rʊud	rʊund, rōōd
zoin	zʊin	zŏn, žo in
taw	tô	tʊu, thŏ
woaf	wŏf	wo͝of
dail	dāl	dĭl
prew	prōō	po͞ot, prʊu
thrain	thrān	trăn
froice	frʊis	frŏd, fʊi sē
spound	spʊund	spʊud
fleach	flĕtch, fletch	flesh, flĕs

Two scoring procedures are used. The first is simply the total number of correct pronunciations. In the second procedure, each item is scored according to the number of sounds in the items that are correctly pronounced (the number in parentheses next to each item on the scoring sheet indicates the maximum possible points for each item). For example, if the child correctly pronounces the first item, s/he receives 3 points. However, if *jit* is pronounced *jet* or *jut* or *jid*, only 2 points are given. If *jit* is pronounced *jab*, *hid*, or *bat*, only 1 point is given.

Pseudoword Naming Task

Student's Name: _____ Student number: _____

School: _____ Total correct: _____

Date tested: _____ Total points: _____

Tester: _____

■■

	Response	Points		Response	Points
1. jit (3)	_____	_____	16. clave (4)	_____	_____
2. med (3)	_____	_____	17. chove (3)	_____	_____
3. dut (3)	_____	_____	18. grake (4)	_____	_____
4. wob (3)	_____	_____	19. trobe (4)	_____	_____
5. pag (3)	_____	_____	20. drime (4)	_____	_____
6. thut (3)	_____	_____	21. roud (3)	_____	_____
7. sath (3)	_____	_____	22. zoin (3)	_____	_____
8. glick (4)	_____	_____	23. taw (2)	_____	_____
9. blesh (4)	_____	_____	24. woaf (3)	_____	_____
10. brop (4)	_____	_____	25. dail (3)	_____	_____
11. mide (3)	_____	_____	26. prew (3)	_____	_____
12. fute (3)	_____	_____	27. thrain (4)	_____	_____
13. voze (3)	_____	_____	28. froice (4)	_____	_____
14. pake (3)	_____	_____	29. spound (5)	_____	_____
15. sone (3)	_____	_____	30. fleach (4)	_____	_____

Instructions for Phoneme Segmentation Task

"Today we're going to see how many sounds are in some funny sounding names. These are the names of children who live in a far away land. I'm going to say a name and then use these counters to break it up in separate sounds. Listen carefully, so that you can learn how to play the game. The first name is **sĭf.** After saying **sĭf** the tester pronounces the sounds /s/ - /ĭ/ - /f/ and **simultaneously** with **each** sound pushes a counter forward. The tester then says, "Did you see how I broke the name **sĭf** into sounds? I used one counter for each sound in **sĭf**, one for /s/, one for /ĭ/ and one for /f/. Now I want you to say the name **sĭf** and to break it up into separate sounds just like I did. Use the counters and leave a gap between each sound." If necessary the task is demonstrated again and the child is asked to copy what s/he was shown. The tester then moves on to the four practice items. "I'm going to say some more names and I want you to say them and then break them up into sounds just like you did with **sĭf**. However, these names may have more sounds or they may not have as many sounds." If the child gives the name of a letter, ask for the sound the letter makes. It is important to have the child repeat the name first to make sure that s/he heard it correctly. If the child does not pronounce a name correctly, the tester should immediately correct the pronunciation before the child attempts to break the word into separate sounds. If the child makes a mistake on any practice item, corrective feedback is given by repeating the instructions and procedures.

The tester introduces the test items by saying, "Now I am going to say some more names. Use the counters to break them up into separate sounds. Only say the sounds that you hear. Leave a gap between each sound." The tester asks the child to repeat each item before attempting to segment it. The child's pronunciation is corrected, if necessary. No corrective feedback is given for the child's segmentation attempts during the test, only general encouragement. Order of presentation of test items should be rotated across subjects; that is, the first subject starts on item 1, the second subject on item 2, etc. Discontinue testing if the child incorrectly segments **eight** consecutive items.

When scoring the children's responses, record what the child actually says (e.g., /t/ - /ōz/, /t/ - /ō/ - /z/, /tō/ - /z/) and the **number** of sound segments produced for each item. A point is given for each item that is segmented correctly in terms of the **number** of counters the child puts forward.

Phoneme Segmentation Task

Student's Name: _____   Student Number: _____

School: _____   v (4,9,16,21): _____

Date Tested: _____   vc (1,8,15,22): _____

Tester: _____   cv (3,11,13,20): _____

Start at item no: _____   cvc (2,7,17,19): _____

cvc (5,10,14,23): _____

ccvc, cvcc (6,12,18,24): _____

Total: _____

Demonstration item: sĭf
Practice items (with corrective feedback): ŭ, ĭv, vĭ, slĭf

Test Items

			Response	Score				Response	Score
1.	ĕk	(2)			13.	kĕ	(2)		
2.	fĭp	(3)			14.	pĭf	(3)		
3.	zŏ	(2)			15.	ŏz	(2)		
4.	ĭ	(1)			16.	ĕ	(1)		
5.	jăd	(3)			17.	bĕk	(3)		
6.	zĕlk	(4)			18.	prăd	(4)		
7.	tŏz	(3)			19.	dăj	(3)		
8.	ĭp	(2)			20.	pĭ	(2)		
9.	ă	(1)			21.	ŏ	(1)		
10.	kĕb	(3)			22.	ăj	(2)		
11.	jă	(2)			23.	zŏt	(3)		
12.	krŏb	(4)			24.	dĭlt	(4)		

Note: ĭ as in sit
ĕ as in set
ŏ as in pot
ă as in sat
ŭ as in nut

Word Identification Strategy Questionnaire

Student's Name: _____   **Student's Number:** _____

School: _____   **Makes sense:** _____

Date questioned: _____   **Sounds out:** _____

Tester: _____   **No response:** _____

....

Ask the child the following question and record his/her response:

"When you are reading by yourself and you come across a word that you don't know, what do you do to try to figure out what the word is?"

Response:

_____

_____

_____

_____

_____

_____

Teacher Interview

Teacher Name: _____   Teacher Number: _____

School Name: _____   Class level (Current): _____

Years of experience: _____   Qualifications: _____

Gender: _____   Date interviewed: _____

1. When do you take reading lessons? (e.g., time of the day)

2. How often in every week?

3. How long is every reading lesson?

4. Do you administer reading tests? If yes, briefly explain.

5. Do you administer reading records? If yes, how often?

6. How do you monitor reading progress?

7. What are some of the methods you use while teaching reading?

8. What are some of the basal texts that you use for reading? Are there other series? If yes, name them.

9 How often do you think children learn to read?

10. How do you think children should be taught be read?

Teachers' prompt preferences for word identification strategies

Teachers Name: _____

Reading error response strategies. Current class level is (_____).

TEXT | My Three Prompts

1. Mrs Ogre lived in the <u>village</u>
    a. _____
    b. _____
    c. _____

2. "I look <u>beautiful</u>" she said
    when she looked in the mirror.
    a. _____
    b. _____
    c. _____

3. But she saw two legs with a lot
    of green hair, and two <u>feet</u>
    with fourteen toes.
    a. _____
    b. _____
    c. _____

4. One day the elephant and
        totes
    the <u>tortoise</u> were in the forest.
    a. _____
    b. _____
    c. _____

5. The elephant was brown,
    the tortoise was brown
        lion
    the <u>leopard</u> was brown
    and the zebra was brown
    a. _____
    b. _____
    c. _____

6. So the tortoise made beautiful
        stops
    Black <u>spots</u> on the coat of the
    leopard
    a. _____
    b. _____
    c. _____

SAMPLE INFORMATION SHEET

Please read carefully and sign the consent form below

Study title: **English Second Language (L2) Literacy Instruction and Acquisition in Rural Kenyan primary school**

Supervisors

Name:

email address:

Tel. No.

Name:

Email address:

Tel. No.

Contact address: Massey University College of Education,

Private Bag 11 222, Palmerston North,

New Zealand.

Researcher's Kenyan Contact: P. O. Box 76 Kibwezi, Kenya.

What is the study about?

The research is part of my Masters study. It will examine literacy instructional issues in early years (Year 1 to Year 3) of schooling in rural Kenyan primary schools. The study will investigate teachers' literacy instructional approaches, particularly for English language, in an attempt to determine which instructional approach would be most effective for beginning second language readers. It is hoped that the results from the study will give valuable insights on what needs to be changed or improved as far as instructional procedures in reading are concerned.

What are participants asked to do?

- The participants will be asked to respond to some questions, which will be audio taped (where necessary) if acceptable.
- The children will be asked to
  - Respond to some reading related tasks by reading them orally or by writing
  - Respond to one interview question.

How much time is involved?

For teachers the schedules will take about 30 minutes in each interview, and for children it will last about 15 minutes.

What can the participants expect from the researcher?

If they take part in the study, they have the right to:

- Refuse to answer any particular questions, or read words in case of children.
- Ask any further questions that occur to them during the course of the study.
- Provide information on the understanding that it will be used for academic purposes only and the information will be confidential and anonymous.
- Have access to the summary of the findings when it is complete through your school, if need be.

How is confidentiality and privacy to be ensured?

- Data collected will not identify anyone by name.
- No personal information will be passed on to any other person or agency.
- Data analysis will be undertaken and reported in such a way that information cannot be directly linked to anyone.
- Material used to collect information will be kept in a secure place accessed only by the researcher and destroyed when it is no longer needed for the study.

If you have any questions regarding any aspect of the research please do not hesitate to contact me, or one of my supervisors.

SAMPLE CONSENT FORM

I have read the information sheet and have details of the study explained to me.

My questions have been answered to my satisfaction, and I understand that I may ask further questions at any time.

I understand I have the right to withdraw from the study at any time.

The information collected will be used only for this research and publications arising from this research project.

I agree to be involved in this study under the conditions set out in the information sheet.

Signed: _____

Name: _____

Date: _____