AN EMPIRICAL VALIDATION OF BEGINNING READING SKILLS FOR NIGERIAN PRIMARY SCHOOLS USING THREE STRUCTURED METHODOLOGIES

PETER IFEANYI OSUORJI
B.ED, M.ED. (Special Education) UNIJOS
MAT. NO. PGED/EJ/13192/02

A thesis in the DEPARTMENT OF SPECIAL EDUCATION AND REHABILITATION SCIENCES, Faculty of Education. Submitted to the School of Postgraduate Studies, University of Jos in partial fulfillment of the requirements for the award of the degree of DOCTOR OF PHILOSOPHY of the UNIVERSITY OF JOS.

NOVEMBER, 2006

DECLARATION

I hereby declare that this work is the product of my own research efforts, undertaken under the supervision of Professor John Izuka Ihenacho and has not been presented elsewhere for the award of a degree or certificate. All sources have been duly distinguished and appropriately acknowledged.

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Peter Ifeanyi Osuorji
Mat No. PGED/UJ/13192/02

ACKNOWLEDGEMENT

DEDICATION

This project is dedicated to all Children with Reading Disabilities, their Parents and Teachers in Nigeria.

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ABSTRACT

This study examined the empirical validation of beginning reading skills for Nigerian primary schools using three structured methodologies. Specifically the study was designed to find out whether there would be reading gains on the part of the pupils following the application of the three methods and their levels of effectiveness including which one would be discovered most effective following the pupils' performance on test. The sample was made up of two hundred and seventy pupils of primary four classes from three primary schools in Jos metropolis, Plateau State. The sample was divided into three major groups of ninety pupils each. The groups were named A, B, and C, were assigned the experimental methods (phonic, whole language, and interactive) respectively, and were given instruction using the structured methodologies simultaneously. The Reading Achievement Assessment Instrument was used for data collection. The instruction using the three structured methodologies took fourteen weeks simultaneously for the three groups. Statistical tools which included: t –test, analysis of variance (ANOVA), and post hoc tests were used for data analyses. The findings revealed that the three structured methodologies were effective in the development and acquisition of beginning reading skills among the children. The instruction involving phonics method proved most effective followed by interactive method before whole language method. The findings were interpreted in terms of their implications for reading in the primary school setting.

CHAPTER ONE

INTRODUCTION

1.1   BACKGROUND OF THE STUDY

Reading is a source of great joy for many people and a source of great sorrow for many others. Despite thousands of hours of school instruction, many children never develop satisfactory reading skills (Vasta, Haith and Miller, 1995). The question is, whether research can help to identify the problems and suggest solutions for cases of reading disability among children at the primary schools setting?

Reading as a cognitive activity is closely bound to many of the cognitive processes. For example, information processing theorists have proposed a number of different change mechanisms among which include: encoding, automatization, and strategy construction. Siegler (1991) defines encoding as "identifying the most important features of objects and events and using the features to form internal representations" (p.10). Encoding is related to what we normally mean by attention, but it carries some further implications as well. Information processing is always active rather than passive, as the child attends to only some features of the environment and uses only some features to arrive at judgments. Next is the emphasis on how the child interprets or represents the encoded information. Encoding involves not simply attending but also forming some sort of representation of what has been attended to, and it is this representation that guides subsequent problem solving.

Automatization is a characteristic progression in the development of any cognitive skill. At first, the skill – precisely because it is new – requires considerable attention and effort, and few resources may be left for any other sort of cognitive processing. With practice, however, execution of the skill becomes more and more automatic, cognitive resources are freed, and more advanced forms of problem solving

become possible. Automatization is a primary mechanism by which the cognitive system overcomes inherent limitations on the amount of information that can be processed.

The same can be said for strategy construction. Like automatization, strategies serve to overcome processing limitations by increasing the efficiency with which information is handled. The child who realizes the organization inherent in a set of items, for example, may need to remember only the general categories and not every individual item. Strategies are again important, for example. Siegler's (1988) research has shown that children develop strategies for identifying words that are analogous to their strategies for adding numbers. They use retrieval from memory, for example, for high – certainty targets and fall back on slower sounding – out strategies when faced with less well known words. There are again individual differences, with good readers more likely to use retrieval than poor readers.

Strategies are also important when children move beyond individual words and attempt to comprehend text. Comprehension monitoring is central to effective reading, that is, continual self-checking to be sure that what has been read is understood, coupled with rereading and other correction procedures when comprehension fails. Older children are generally better at comprehension monitoring than younger children, and good readers are better than poor readers (Garner, 1990). Monitoring their reading efforts may be the most important metacognitive skill that many people exercise (Vasta, Haith and Miller, 1995).

The developments in regard to representation and problem solving also play a role in reading. The formation of story schemes can help children to understand text that fits an established schema (Garner, 1993). More generally, knowledge of a variety of sorts can be brought to the task of comprehension, again there are both developmental and individual differences in the ability to use existing knowledge to make sense of new

information (Siegler, 1990). Memory is important as well. The kind of short-term storage space is critical for reading to understand even a single sentence; readers must be able to hold in memory the first words read as they progress to later words in the sentence. Difficulties with short-tem memory are one contributor to problems in reading (Siegel, 1993a).

So far the focus has been on the ultimate goal in reading – namely, comprehension of text. But a number of more basic processing steps must be executed before comprehension becomes an issue: perception of letters, translation of letters into sounds, combination of individual sounds into words. Here, too, research has provided a wealth of information about how reading occurs and about differences between good and poor readers (Adams, 1990, Rack; Hulme, and Snowling, 1993).

One finding, in particular, emerges as important with respect to both developmental and individual differences, and that concerns the role of phonological awareness. The term phonological awareness refers to both the general realization that letters correspond to sounds and the ability to perform specific letter-to-sound translations. It refers to children's ability "crack the code" to figure out how squiggles on paper can yield the sounds and words of the language.

So defined, phonological awareness would appear to be central to reading, and research suggests that this is the case (Siegel, 1993; Stanovich, 1988). Deficits in phonological decoding skills are a major contributor to severe reading difficulties. And the early emergence of phonological awareness is a good predictor of eventual reading ability. Indeed, measures of phonological awareness at the junior primary school are a better predictor of subsequent reading than are measures of IQ (Goswami and Bryant, 1990).

The studies of phonological awareness are relevant to the long-standing debate between two approaches to the teaching of reading: the phonics and whole – language approaches. For much of the past two decades, the proper method for teaching children to read and write was under the divergent influences of two powerful schools of thought, engaging educators in the so-called "reading wars" (Vasta, Haith, and Miller, 1995:343). Determining the best means of teaching children to read is of particular concern in light of how reading performance is observed among some school children more especially those with learning difficulties.

In the 21st century, however, the debate has evolved. Instead of focusing on the either/or of the phonics versus whole-language approaches to reading instruction, the debate now centres on the essential components of a comprehensive reading programme.

Phonics, or skills-based instruction, begins with reading lessons that focus on sounding out first letters, and then combinations of letters, tightly controlled vocabulary, and short "basal" (or basic) reading passages, followed by numerous skills exercises, each with only one correct answer. Proponents of skill-based or phonics instruction maintain that children are better able to decode words on their own after learning how to decode letters, sounds, and letter groupings (Armbruster, Lehr, and Osborn, 2001).

The meaning – based, or whole-language approach, emphasizes reading comprehension. Students focus on whole words and draw meaning from the context of those words within sentences and paragraphs. Supporters of whole-language instruction assert that children learn to read similar to the way they learn to speak and the whole – language approach complements this learning process. Just as their desire to communicate orally prompted them to master vocabulary and learn to piece whole sentence together, children will be so motivated to learn to communicate in written form (Coles, 2000). The whole language approach incorporates oral and silent reading, and

reading authentic literature as opposed to the basal readers used in most phonics programmes.

Today, the reading debate no longer centres on which approach is better, but the proper mix of each in a comprehensive reading programme. Some feel that more emphasis should be placed on the skills-based instruction with a reading curriculum, while others feel that more emphasis should be placed on authentic reading tasks.

A Houston-based study concluded that at-risk students performed better when explicit, systematic phonics instruction was taught first in their reading curriculum (Foorman, Francis, Fletcher, Schatschneider, & Mehta, 1998). Since the publication of that report, policies have shifted to require that explicit skills instruction be a part of the reading curriculum (Moustafa, 2001). In 2000, the National Reading Panel (NRP) released an extensive review of reading research. The NRP study identified five essential elements of effective reading instruction. The panel concluded that effective reading instruction includes: phonics, phonemic awareness, fluency, vocabulary, and comprehension (Staresina, 2003).

The National Institute for Child Health and Human Development (NICHD) reading research has centred on three basic questions: (1) How do children learn to read English (and other languages)? What are the critical skills, abilities, environments, and instructional interactions that foster the fluent reading of text? (2) What skill deficits and environmental factors impede reading development? and (3) For which children are which instructional approaches not beneficial, at which stages of reading development?

1.2   STATEMENT OF THE PROBLEM

The critical role of phonemic awareness will pose a question, how do children learn to read English? Reading is the product of decoding and comprehension (Gough,

Juel, & Griffth, 1993). Although this sounds simple, learning to read is much tougher than people think. To learn to decode and read printed English, children must be aware that spoken words are composed of individual sound parts termed phonemes. This is what is meant by phoneme awareness.

Phoneme awareness and phonics are not the same. When educators assess phoneme awareness skills, they ask children to demonstrate knowledge of the sound structure of words without any letters or written words present. To assess phonics skills, they ask children to link sounds (phonemes) with letters. The development of phonics skills depends on the development of phoneme awareness. Phoneme awareness is critical in beginning reading, because to read an alphabetic language like English, children must know that written spellings systematically represent spoken sounds. When children figure this out, either on their own or with direct instruction, they have acquired the alphabetic principle. However, if beginning readers have difficulty perceiving the sounds in spoken words for example, if they cannot hear the /at/ sound in "fat" and "cat" and perceived that the difference lies in the first sound they will have difficulty decoding or sounding out new words. In turn, developing reading fluency will be difficult, resulting in poor comprehension, limited learning and little enjoyment.

Many children have difficulty developing phoneme awareness. This is where the individual sounds (phonemes) within the words are not consciously heard by the listener. No one ever receives any natural practice understanding that words are composed of smaller, abstract sound units (Learning Disabilities Association of America, 2004).

Although spoken language is seen less, the beginning reader must detect the seams in speech, unglue the sounds from one another, and learn which sounds (phonemes) go with which letters. We now understand that specific systems in the brain

recover sounds from spoken words, and just as in learning any skill, children understand phoneme awareness with different aptitudes and experiences (Moustafa, 2001).

In the initial stages of reading development, learning phoneme awareness and phonics skills and practicing these skills with texts is critical. Children must also acquire fluency and automaticity in decoding and word recognition. If beginning readers read the words in a laborious, inefficient manner, they cannot remember what they read, much less relate the ideas to their background knowledge. Thus, the ultimate goal of reading instruction for children to understand and enjoy what they read may not be achieved.

Programmatic research over the past 35 years has not supported the view that reading development reflects a natural process that children learn to read as they learn to speak, through natural exposure to a literature environment. Indeed, researchers have established that certain aspects of learning to speak, beginning readers must appreciate consciously what the symbols stand for in the writing system they learn (Liberman, 1992).

Unfortunately for beginning readers, written alphabetic symbols are arbitrary and are created differently in different languages to represent spoken language elements that are themselves abstract. If learning to read were natural, there would not exist the substantial number of cultures that have yet to develop a written language, despite having a rich oral language. And, if learning to read unfolds naturally, why does our literate society have so many children and adults who are illiterate?

Despite strong evidence to the contrary, many educators and researchers maintain the perspective that reading is an almost instinctive, natural process. They believe that explicit instruction in phoneme awareness, phonics, structural analysis, and reading comprehension skills provide the reader with a meaning – based structure for the

decoding and recognition of unfamiliar words (Edelsky, Altwerger, & Flores, 1991; Goodman, 1996).

Scientific research, however, simply does not support the claim that context and authentic text are a proxy for decoding skills. To guess the pronunciation of words from context, the context must predict the words. But content words, the most important words for text comprehension, can be predicted from surrounding context only 10 to 20 percent of the time (Moustafa, 2001). Instead, the choice strategy for beginning readers is to decode letters to sounds in an increasingly complete and accurate manner (Adams; 1990, Forman, Francis, Fletcher, Schatchneider, and Mehta, 1998).

Good readers are phonemically aware, understand the alphabetic principle, apply these skills in a rapid and fluent manner, possess strong vocabularies and syntactical and grammatical skills, and relate reading to their own experiences. Conversely, the children who are most at risk for reading failure enter school without these early experiences. Frequently, many poor readers have not consistently engaged in the language play that develops an awareness of sound structure and language patterns (Armbruster, Lehr, and Osborn, 2001).

Many children, however, with robust oral language experience, average to above average intelligence, and frequent early interactions with literacy activities also have difficulties learning to read. Why? (Learning Association of America, 2004). Programmatic research clearly indicates that deficits in the development of phoneme awareness skills not only predict difficulties learning to read, but they also have a negative effect on reading acquisition.

Attention at this point could be directed from research to practice. Scientific research can inform beginning reading instruction. This is as it has been informed that reading does not develop naturally, and for many children, specific decoding, word

recognition, and reading comprehension skills must be taught directly and systematically.

Substantial evidence shows that many children in the junior primary school classes and beyond will require explicit instruction to develop the necessary phoneme awareness, phonics, spelling, and reading comprehension skills. But for these children, this will not be sufficient. For the children having difficulties learning to read, each of foundational skills should be taught and integrated into textual reading formats to ensure sufficient levels of fluency, automaticity, and understanding.

There is therefore, the need to move beyond assumptions. One hopes that scientific research informs beginning reading instruction, but it is not always so. Unfortunately, many teachers and administrators who could benefit from research to guide reading instructional practices do not yet trust the idea that research can inform their teaching. There are many reasons for this lack of faith. Kennedy (1997) observes that it is difficult for teachers to apply research information when it is of poor quality, lacks authority, is not easily accessible, is communicated in an incomprehensible manner, and is not practical. Moreover, the lack of agreement about reading development and instruction among education leaders does not bode favourably for increasing trust. The burden to produce compelling and practical information lies with reading researchers.

Most great scientific discoveries have come from a willingness and an ability to be wrong. Researchers and teachers could serve our children much better if they had the courage to set aside assumptions when they are not working. What if the assumption that reading is a natural activity, as appealing as it may be, were wrong and not working to help our children read? The fundamental purpose of science is to test our beliefs and

intuitions and to tell us where the truth lies. Indeed, the education of our children is too important to be determined by anything but the strongest of objective scientific evidence.

The thrust of this study is to investigate how far scientific research can inform beginning reading instruction. It is observed that reading does not develop naturally. For many children having difficulties learning to read, each of the foundational skills should be taught and integrated into textual reading formats to ensure sufficient levels of fluency, automaticity, and understanding. This study will help to restore the trust teachers and administrators who could benefit from such research, about the idea that research can inform their teaching.

1.3   PURPOSE OF STUDY

The main concern of this study is to obtain an empirical validation of beginning reading skills for Nigerian primary schools using three structured methodologies(Phonics, whole language and interactive methods). There is the need to investigate the application of explicit instruction to develop the necessary beginning reading skills among primary school children.

Becoming a reader involves the development of important skills, including to: use language in conversation, listen and respond to stories read aloud, recognize and name the letters of the alphabet, and listen to the sound of spoken language. Others include to connect sounds to letters to figure out the "code" of reading, read often so that recognizing words becomes easy and automatic, learn and use new words, and understand what is read (National Institute for Literacy, 2005). Learning to read (Chall, 1996; Pressely, 1998) involves: phonological awareness, phonics, spelling, fluency, vocabulary and comprehension (McEwan, 2002).

Knowledge of the Cipher is critical to the acquisition of literacy, since it is a basic component of both decoding and comprehension, which underlies the acquisition of writing. Knowledge of cipher is in turn dependent on two main factors; phonemic awareness, the knowledge that the spoken word can be broken down into a series of specific sounds, and exposure to print which provides models of written text, and specific letters and words which can then be connected to specific sound sequences.

Phonemic awareness and exposure to print are therefore the two factors that are most critical to the acquisition of literacy. The three phonological processes generally recognized as related to reading are phonemic or phonological processes generally recognized as related to reading are phonemic or phonological awareness, phonological coding in working memory and rapid access to phonological information in long term memory. Of these three processes, phonological awareness has been found to have the strongest causal relationship to word recognition skills, and is also the most amenable to instruction which is why it is usually noted in the literature as being critical to the acquisition of literacy.

The present study is designed to validate beginning reading skill for Nigerian primary school using three structured methodologies (phonics, whole language and interactive).

The specific objectives include:

To validate the beginning reading skills necessary for reading development.

To verify the efficacy of the three structured methodologies namely: phonics, whole language and interactive approaches.

To verify the efficacy of the assessment strategies investigated in the study.

1.4   HYPOTHESES

Following the study on the validation of beginning reading skills for Nigerian primary schools using three structured methodologies, conducted in Jos metropolis of Plateau State, four research hypotheses are stated. This is to determine if there is any significant difference in the beginning reading achievement skills of the pupils on the basis of the use of the three structured methodologies, including which one is most effective:

Ho$_1$:   There will be no significant difference in the beginning reading achievement skills of Nigerian primary school children on the basis of the use of phonics reading method.

Ho$_2$:   There will be no significant difference in the beginning reading achievement skills of Nigerian primary school children on the basis of the use of whole language reading method.

Ho$_3$:   There will be no significant difference in the beginning reading achievement skills of Nigerian primary school children on the basis of the use of interactive method.

Ho$_4$:   There will be no significant difference in the beginning reading achievement skills of the children on the basis of the comparison of the three structured methodologies (phonics, whole language and interactive).

1.5   JUSTIFICATION OF THE STUDY

This study presents a confident thrust on the intervention programme for primary school children who find it difficult learning to read. When children become good readers in the early classes, they are more likely to become better learners through their

school years and beyond. Learning to read is hard work for children. Fortunately, this research is joining others to suggest how to give each child a good start in reading.

Becoming a reader involves the development of important skills, including learning to: use language in conversation, listen and respond to stories read aloud, recognize the letters of the alphabet, listen to the sound of spoken language, learn and use new words, and understand what is read. Learning to read will see teacher setting the children to read with some critical early skills; as the teachers take up the task of building the skills that children will use every day for the rest of their lives. There is the need to understand what teachers are teaching and the structured approaches applied if progress is to be made on the classroom beginning reading programme.

If the children are just beginning to learn to read, the teachers should be seen teaching the sounds of the language, the letters of the alphabet, and helping the children learn and use new words, as well as reading to the children every day. There is need to involve teachers in systematically teaching phonics – how sounds and letters are related; and giving children the opportunity to practice the letter-sound relationships they are learning. Next include helping children write the letter-sound relationships they know by using them in words, sentences, messages, and their own stories, and showing children ways to think about and understand what they are reading. When the children are reading, teachers should be seen continuing to teach letter-sound relationships for children who need more practice, more especially those children with beginning reading difficulties. Teachers should be found teaching ways to learn the meaning of new words, and helping children understand what they are reading.

It is therefore, expected that a research of this nature will inform beginning reading instruction following the validation of the beginning reading skills expected to be developed by the children in the course of learning to read. Another is the verification

of the efficacy of both the data sourcing instrument developed and the intervention strategies tested in the research. All these will help restore the trust that research can inform teaching for teachers and administrators including their faith. As Kennedy (1997) has pointed out, "it is difficult when research is of poor quality, lacks authority, is not easily accessible, is communicated in an incomprehensible manner, and is not practical" (p.27).

This research is expected to bode favourably for increasing trust as the findings will provide a sound agreement about reading development and instruction among education leaders. This will produce compelling and practical information to reading researchers in effect, on the part of acquisition of beginning reading skills and reading development among school children learning to read.

1.6 THEORETICAL FRAMEWORK

This study is based on the work of Vellutino (1991) titled: *Convergent findings on theoretical foundations of code-oriented versus whole language approaches to reading instruction.*

This work centres on research bearing on the theoretical foundations of code-oriented versus whole language approaches to reading instruction, with a focus on the following issues: (a) the role played by word identification in reading; (b) the weight accorded context in word identification; and (c) the respective roles played by alphabetic coding and phoneme awareness in learning to read. The evidence, on balance, favours the major theoretical premises on which code-emphasis approaches to reading instruction are based and is at variance with the major theoretical premises on which whole-language approaches are based. This therefore, recommends the inclusion of interactive

(balanced) approach, as findings do not preclude the compatibility of certain features of both code-emphasis and whole language approaches.

The present study therefore, supports the adoption of three reading theories, namely: The top-down; the bottom-up; and interactive reading theories, with each focusing on the associated typical reading model.

The Top-down theory emphasizes what the reader brings to the text, such as prior knowledge and experiences; saying that comprehension begins in the mind of the reader, who already has some ideas about the meaning of the text, and proceeds from whole to part. For example: Reader's prior knowledge to semantic cues, and to syntactic cues, and to other more specific information. Proponents of top-down reading theory include Goodman (1985); and Smith (1994).

The views of some researchers about the top-down reading theory include that reading is not decoding written language to spoken language. Reading here does not involve the processing of each letter and each word, and reading is a matter of bringing meaning to print, not extracting meaning from print (McCormick, 1998). Again, the goal of reading is constructing meaning in response to text. It requires interactive use of graph-phonic, syntactic, and semantic cues to construct meaning (Goodman, 1985).

A widely accepted educational philosophy that utilizes a top-down approach to reading is called whole language. Outline of the features include that: Readers can comprehend a selection even though they do not recognize each word, should use meaning and grammatical cues to identify unrecognized words, and reading for meaning is the primary objective of reading rather than mastery of letters, letter/sound relationships and words. Again, that reading requires the use of meaning activities rather than the mastery of a series of word-recognition skills. The primary focus of instruction here should be the reading of sentences, paragraphs and whole sections, and the most

important aspect about reading in this case is the amount and kind of information gained through reading (McEwan, 2002).

The Bottom-up theory, on the other hand emphasizes the written or printed text, which says that comprehension begins by processing the smallest linguistic units (phoneme), and working toward larger units (syllables, words, phrases and sentences). The model proceeds from part to whole. For example: Phoneme to syllable to word to sentence. In the beginning stages, the model gives little emphasis to the influences of the readers; world knowledge, contextual information, and other higher-order-processing strategies (Dechant, 1991). Proponents of the bottom-up theory include, Flesch, (1955); Gough (1985) and LaBerge and Samuels, (1985). The views of some researchers about the bottom-up reading model include that: The first task of reading is learning the code or the alphabetic principle by which written marks conventionally represent phonemes (Bloomfield and Barnhart, 1961). The meaning of the text is expected to come naturally as the code is broken based on the reader's prior knowledge of words, their meanings, and the syntactical patterns of his/her language (McCormick, 1988), as writing is only a device for recording speech

Bottom-up models operate on the principle that the written text is hierarchically organized (i.e. on the grapho-phonic, phonemic, syllabic, morphemic, word and sentence levels) and that the reader first processes the smallest linguistic unit, gradually compiling the smaller units to decipher and comprehend the higher units (e.g. sentence syntax) (Dechant, 1991). The reader must learn to transfer from the auditory signs for language signals, to a set of visual signs for the same signals, and must learn to automatically respond to the visual patterns. The cumulative comprehension of the meanings signaled then enable the reader to supply those portions of the signals, which are not in the graphic representations themselves. Here, learning to read means developing a

considerable range of habitual shapes (Fires, 1962). Reading is there seen as a strictly serial process. Letter-by-letter visual analysis, leading to positive recognition of every word through phonemic encoding. Lexical, syntactic and semantic rules are applied to the phonemic output which itself has been decoded from print (McCormick, 1988).

A widely accepted instructional programme that incorporates several bottom-up principles is the phonic approach to reading. Some features of a bottom-up approach to reading which advocates believe the reader needs to learn include to: identify letter features, link these features to recognize letters, and combine letters to recognize spelling patterns. Others include, link spelling patterns to recognize words, and then proceed to sentence, paragraph and text-level processing.

Interactive reading theory recognizes the interaction of bottom-up and top-down processes simultaneously throughout the reading process. This model attempts to combine the valid insights of bottom-up and top-down models, and to take into account the strong points of both models, as it tries to avoid the criticisms leveled against each, making it one of the most promising approaches to theory of reading today (McCormick, 1988). Proponents of the interactive reading model include: Rumelhart, (1985), Barr, Sadow and Blachowicz, (1990) and Ruddell and Speaker, (1985). The views of some researchers about the interactive reading model include that: the interactive model suggests that the reader constructs meaning by the selective use of information from all sources of meaning (graphemes, morphemic, syntax, semantics) without adherence to any one set order. The reader simultaneously uses all levels of processing even though one source of meaning can be primary at a given time (Dechant, 1991). The interactive model is one, which uses print as input and has meaning as output. But the reader provides input, too, as the reader, interacting with the text, is selective in using just as little of the cues from text as necessary to construct meaning (Goodman, 1996).

Reading here, is at once a perceptual and a cognitive process, as it is now seen as a process, which bridges and blurs the two (top-down, bottom-up) traditional distinctions. In this case, a skilled reader must be able to make use of sensory, syntactic, semantic and pragmatic information to accomplish the task. These various sources of information appear to interact in many complex ways during the process of reading (Rumelhart, 1985).

A young child in a Whole Language (top-down model) classroom is provided with simple, predictable and repetitive text-frequently the text is already familiar to the child, making it that much easier to understand. Emphasis in whole language classroom is not placed on reading precision and accuracy, but on comprehension and appreciation. Children are not expected to read the text verbatim, as they are allowed to insert and substitute words as long as the story still makes sense, and as long as the child understands the gist of the story. The primary goal of the whole language teacher is to foster a love for the act of reading authentic and connected text, and to keep the process of reading instruction uncontrived.

In a phonics (bottom-up) classroom, by contrast, a great emphasis is placed on reading precision and children are encouraged to read the words exactly as they appear on the page. Children are explicitly taught "rules" about the way words are written and spelled, and they are taught spelling-sound relationships. After a teacher provides an explicit lesson in a particular phonics rule (e.g if the last letter of a word is an "e", then the first vowel is usually long), the child is presented with a passage of text that contains many words consistent with that rule (called decodable text); this provides the child with the opportunity to apply each phonics rule on a variety of words in the context of a passage. The goal of the phonics teachers, then, is to instill children with the phonics rules and the common spelling-sound relationships, and to teach children to apply this

knowledge in sounding-out each word they encounter, making the assumption that comprehension and appreciation will be a natural consequence of accuracy.

In an interactive (interactive model) classroom, emphasis is on teaching reading and writing. This focuses on teacher-directed interaction between whole language and phonics activities. The rationale for this is based on the belief that learners need explicit instruction about various reading strategies that they can use to help them understanding a text. The interactive model is a development aimed at adjusting the whole language programme. The whole language programme was viewed not to be the best way to teach reading and writing. There was a feeling that interaction between whole language and phonic approaches was better.

Both interactive and whole language instructional programmes are based on a reading theory that says: Readers construct meaning from texts by selective use of information from a variety of sources of meaning such as: prior knowledge, experience, print and context. A reader can choose to draw more heavily on any one source of meaning at any time, yet can process information simultaneously from a variety of sources. This programme requires that teachers explicitly teach helpful reading strategies which come from bottom-up reading models. Whole language programmes, on the other hand, leave the choice of reading strategies up to the reader. Interactive programme also requires that reading activities involve meaningful texts.

Materials needed for an interactive instructional programme include: plenty of interesting texts which pupils are highly motivated to read. These can be preprinted or student-generated, or both, next is a phonics or syllable-based primer with lessons linked to meaningful texts (although optional), and a teachers' guide listing the sounds or syllables to be taught (equally optional).

Parts of interactive instructional programme include reading readiness, language experience activities or themes, shared reading experiences, and primer lessons (optional). Others include, writing lessons to teach letter formation, writing lessons to encourage process writing and opportunities to develop fluency. Here, the major focus of the reading programme is to assist readers to construct meaning from texts, and structured activities are scheduled to encourage the development of various reading strategies.

1.7 SIGNIFICANCE OF STUDY

This study has been designed to obtain an empirical validation of beginning reading skills for Nigerian primary schools using three structured methodologies. The main goal of reading instruction is to help students develop as effective, proficient readers. Effective readers come to the printed page expecting what they read to make sense. Effective reading equally involves the use of a variety of strategies or behaviours that enable a person to construct meaning from print.

It is expected that a study of this nature will address pertinent issues as they relate to the major variables of the research and their interpretation in terms of reading achievement at the primary school level.

1.7.1 <u>Learning to Read</u>

As mentioned earlier, when children become good readers in the early classes, they are more likely to become better learners throughout their school years and beyond (National Institute for Literacy, 2005). But learning to read is hard work for children. It is expected that this study will through its findings establish the beginning reading skills necessary for reading development and skills acquisition at the primary school level.

1.7.2   Addressing the Reading Problem

Kameenui (1996) released research results that shed light on the skills and understandings about literacy which children must acquire in order to learn to read. The studies report that more than one in six young children will encounter a problem learning to read during their crucial first three years in school. The National Assessment of Education Progress (NAEP, 2005) reported results that indicate every school has a number of children who are failing the task of learning to read.

The results of the researchers' analysis reveal that teachers need to build a solid foundation for their students (especially those with learning disabilities) to succeed in learning to read. The ten prerequisite skills that build this solid reading foundation (Kameenui, 2005) include: Create appreciation of the written word; develop awareness of printed language, learn the alphabet, understand the relationship between letters and words; and understand that language is made of words, syllables, and phonemes. Others include; learn letter sounds; sound out new words; identify words in print accurately and easily; know spelling patterns; and learn to read reflectively.

1.7.3   Principles for Learning to Read

By analyzing the ways in which children learn to read, the skills essential to the learning process would have been identified. The validation of the beginning reading skills will involve the verification of the data-sourcing instrument developed for the study. Following such verification, the research instrument can be adopted for assessment and identification of children with reading problems at the beginning reading stage.

1.7.4 <u>Applying the Reading Methodologies</u>

The information derived from the study will include the efficacy of the intervention strategies tested in the research. Three structured methodologies are being investigated in this study. These include: phonics, whole language and interactive approaches. The three methodologies will inform effective approaches that will benefit all children and emphasize the skills children with beginning reading problems must develop in order to become good readers. The information will equip educators with the effective and structured methodologies they need in order to avoid reading problems before they begin and to correct them if they exist (National Assessment of Education Progress, 1998).

The implication of the research findings will be interpreted in terms of teaching and learning of reading at the beginning reading stage in the primary school setting. This is more so when success in learning and school in general requires strong and efficient reading as a tool. Reading to lean, that is, using reading as a tool for learning, is only possible when pupils have developed appropriate skills in the process of reading development and acquisition (learning to read), at the beginning reading stage (National Institute for Literacy, 2005).

A framework will be provided for primary school administrators for organizing workshops and seminars for teachers, parents and the general public on effective beginning reading skills and the associated instructional methodologies. This will be most beneficial to parents who teach reading to their children. Reading is a continuous process. The need to learn reading skills will deliver one successfully into a liberated literate society.

1.8   SCOPE AND DELIMITATION OF STUDY

The study is an empirical validation of beginning reading skills for Nigerian primary schools using three structured methodologies. This is essentially an intervention programme for the development and acquisition of beginning reading skills, involving primary school pupils, in Jos metropolis.

In addressing the reading problems of the children, attention is given to the principles for learning to read, considering the basic skills that build this solid reading foundation. Kameenui (1996) identifies such skills as: create appreciation of the written word, develop awareness of printed language, learn the alphabet, understand the relationship between letter and words, and understand that language is made of words, syllables, and phonemes. Others include, learn letter sounds, sound out new words, identify words in print accurately and easily, know spelling patterns, and learn to read reflectively.

The five major beginning reading skill areas to be validated include the following:

Phonological awareness − informs the pupils' ability to hear and segment the sounds of the language of reading instruction.

Phonics − informs the pupils' ability to master letter-sound relationship, spelling, word patterns and fixed-up strategies.

Fluency − focuses on pupils' ability to demonstrate appropriate reading rate, interaction and phrasing for a variety of texts.

Vocabulary – addresses pupils' ability to identify words, word parts and word families.

Comprehension strategies − address the pupils' ability to utilize background knowledge/schema, clarifying, determining importance, inferring, questioning, summarizing and visualizing.

Appropriate step is taken to verify the efficacy of the data sourcing instrument developed and the intervention strategies tested in the research.

Specifically for this study, pupils of primary four from large co-educational schools were to be investigated for discernible relationships of likeness or difference on the reading development and acquisition of the beginning reading skills. This is based on the application of three structured methodologies namely: phonics, whole language and interactive approaches.

The study does not include such variables as: early childhood factors, including parental influences on cognitive and social development, family literacy and the role of preschools as language and literacy environments.

1.9 OPERATIONAL DEFINITION OF TERMS

The following terms are operationally defined to specify the procedures and operations to be followed in the investigation:

i. **Validation –** refers to the process of finding out the workability of beginning reading skills and the three structured methodologies tested in the research.

ii. **Empirical –** refers to the experimental processes to be followed to verify the efficacy of both data sourcing instrument developed and the intervention strategies tested.

iii. **Structured methodologies** – refer to the three experimental beginning reading instructional approaches the efficacy of which are subject to validation in the course of the investigation. The three structured methodologies include the following:

a. **Phonics method** is skill-based approach that involves the breaking down of words into smaller parts through the decoding process, focuses on

sound-letter relationship, and applies rules, formulas and patterns of reading and speech.

    b.   **Whole language method** is meaning-based which focuses on reading and writing, and language arts as pupils naturally learn to read and write, with emphasis on comprehension and meaning in text.

    c.   **Interactive method** is the balance to reading instruction, which combines the best of phonics and whole language approaches to teach both skills and meaning of text.

iv.   **Primary school pupils –** refer to primary four pupils whose reading development and acquisition of the beginning reading skills will be determined following the use of both the data sourcing instrument developed and the intervention strategies tested in the study.

v.   **Beginning reading skills** – refer to the basic foundational skills which must be developed and acquired to succeed in learning to read. Such skills include knowing: sounds of language, the letters of the alphabet, learn and use new words, letter-sound relationships, the meaning of words, and understand what is read.

vi.   **Learning to read** – refers to the primary process of developing and acquiring the basic beginning reading skills in order to possess reading as a tool for learning. This is different from reading to learn which is the end product of the former. In reading to learn, reading has been developed and acquired as an instrument for learning. Reading to learn cannot take place without the development and acquisition of the basic foundational skills exposed in the process of learning to read.

vii. **Reading theory** – refers to a set of interrelated propositions or hypothesis that presents an explanation of how the model teaching of reading can be governed. Three of such reading models involved this research include:

a. **Top-down model** – emphasizes what the reader brings to the text, as reading is driven by meaning, and proceeds from whole to part. From this perspective, readers identify letters and words only to confirm their assumptions about the meaning of the text (Dechant 1991). The proponents generally agree that comprehension is the basis for decoding skills, not a singular result, and meaning is brought to print, not derived from print. Proponents are: Goodman, (1985), Smith, (1994).

b. **Bottom-up reading model** – emphasizes the written or printed text, as reading is driven by a process that results in meaning (or, in other words, reading is driven by text), and proceeds from part to whole. The first task of reading is learning the code or the alphabetic principle by which written marks, conventionally represent phonemes. The meaning of the text is expected to come naturally as the code is broken based on the reader's prior knowledge of words, their meanings, and the syntactical patterns of the language. Writing is merely a device for recording speech. Proponents are: Flesch, (1955); Gough, (1985); and LaBerge and Samuels, (1985).

c. **Interactive reading model** – recognizes the interaction of bottom-up and top-down processes simultaneously throughout the reading process. This model suggests that the reader constructs meaning by the selective use of information from all sources of meaning (graphemic, Phonemic, morphemic, syntax, semantics) without adherence to any one set order.

The reader simultaneously uses all levels of processing even though one source of meaning can be primary at a given time. This model is one which uses print as input and has meaning as output. But the reader provides input, too, and the reader, interacting with the text, is selective in using just as little of the cues from text as necessary to construct meaning. Proponents are: Rumelhart, (1985); Barr, Sadow, and Blachowicz (1990); Ruddell and Speaker, (1985).

viii.   **Principles for learning to read** – refers to active or characteristic elements that contain the basic facts about the prerequisite reading skills to learn and possess in the process of reading development and acquisition.

ix.   **Phonemic Awareness** – refers to an understanding that words and syllables are comprised of a sequence of elementary speech sounds. This understanding is essential to learning to read an alphabetic language. The majority of children with reading disabilities fail to grasp this idea.

x.   **Beginning reading level** – refers to the first three junior primary school classes when teachers take up the task of building the skills that children will use everyday for the rest of their lives. Such skills include: Teaching the sounds of language, teaching the letters of the alphabet, helping children learn and use new words, systematically teaching phonics – how – sounds and letters are related, helping children write the letter – sound relationships they know by using them in words, sentences, messages, and their own stories, and showing children ways to think about and understand what they are reading.

xi.   **Alphabetic knowledge-** refers to knowing the names and shape of the letter of the alphabet.

xii.   **Alphabetic principles-** refers to the understanding that written letters represent sounds. For example, the word "big" has three sound and three letters.

xiii.   **Blending-** refers to putting together individual sound to make spoken words.

xiv.   **Comprehension-** refers to the ability to understand and gain meaning from what has been read.

xv.   **Decode-** refers to the ability to recognize and read words by translating the letters into speech sounds to determine the word's pronunciation and meaning.

xvi.   **Explicit instruction** – refers to direct, structured, systematic teaching of a reading task.

xvii.   **Fluency** – refers to the ability to read text accurately and quickly and with expression and comprehension.

xviii.   **Print awareness** – refers to knowing about print and books and how they are used.

xix.   **Segmentation**- refers to taking spoken words apart sound by sound.

xx.   **Sight words** – refers to words that a reader recognizes without having to sound them out.

xxi.   **Syllable** – refers to a word part that contains a vowel or, in spoken language, a vowel sound.

xxii.   **Vocabulary** – refers to the words a reader must know in order to communicate effectively, which include words used in speaking or recognized in listening and in print.

xxiii.   **Word recognition** – refers to the ability to identify printed words and to translate them into their corresponding sounds quickly and accurately so as to figure out their meanings.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

This chapter deals with locating, evaluating, and synthesizing reports of research, expert opinion, and information related to the study. The review is on the major variables of the research topic, and reflecting the following subthemes: the philosophy of literacy programme; the theoretical background for foundation to literacy; principles that guide instruction; and domains of foundational reading knowledge. Others include, literacy instruction; the great debate; research findings on teaching reading; and empirical research on reading from the local environment.

2.1   THE PHILOSOPHY OF LITERACY PROGRAMME

The overall goal of any literacy champaign is to design an accessible, affordable, scalable and sustainable comprehensive literacy programme (Wise, Cole, van vuuven, Schwartz, Snyder, Ngampatipatpong, Tuantranont, and Pellom, 2005). The word "comprehensive" is used to describe a literacy programme that will serve the needs of many individuals of many ages, especially those having difficulties with reading due to lack of good educational experience, learning difficulties, language differences, or difficulties due to cognitive disabilities. Here the programme teaches and supports many aspects of reading and reading problems (National Reading Panel (NRP) 2000). It teaches foundations to literacy to children whose reading difficulties stem from difficulties with reading words, and supports and improves reading comprehension and fluency after these students have mastered word reading skills. Eventually, it will develop and improve processes underlying poor language comprehension for those readers with specific comprehension difficulties even with spoken material, who may or may not have any problems at the word reading level.

Literacy programmes are designed to be easy to use for students and teachers. The application of structural instructional methodologies would encourage students to use the system independently following minimal initial training and to require little or no ongoing support from teachers; as they easily access, understand, and report students' needs and progress easily (Lyon, 1995). Following Connors, Davis, Fortier, Gilley, Ramdle, Solond, and Tarachow (1999), an extensive participatory design activities have been conducted with teachers to ensure that the programmes meet their own and then students needs. At the same time, constant focus is to implement and extend the consensus findings from scientifically based reading research about what is essential in early and remedial reading instruction (Rayner, Foorman, Perfetti, Pesetsky, and Seidenberg, 2001) and Report of the National Reading Panel, NRP, 2000). The programmes have been designed to be easy to use in classrooms by students without disrupting concurrent activities; as such, they were not designed to integrate into a specific language arts curriculum.

2.2 THE CRITICAL NEED FOR EARLY LITERACY PROGRAMMES

Teachers and administrators agree that our educational system has an unsolved crisis. Despite growth of knowledge about what is essential in early and remedial reading instruction, the reading achievement of our poorest readers has not improved. In fact, achievement has even declined in recent years, especially among children at the poverty level (Allington, 2002; and Kennedy 1997) cite data showing that one in six children will encounter a problem in learning to read, and that the problem usually emerges during the first three years of school. If reading problems are not addressed during this period, there is strong likelihood that the student will suffer life long consequences. (Ogunyemi, 1987)

Reading is essential to academic achievement and to producing literate citizens. Poor academic achievement negatively impacts our society in devastating ways, including the reduced well-being of children, reduced numbers of qualified personnel for jobs, and increased risks to the economy (Parrish, 2000). It is asserted that effective and engaging reading instruction, which enables students to work independently, and which adapts to the skills and special needs of each student will significantly ease this crisis (NRP, 2000).

2.3 THEORETICAL BACKGROUND FOR FOUNDATION TO LITERACY

The foundational exercises and Interactive Books have been designed around Gough and Tunner's Simple Model of Reading (1986); Gough, Hoover, and Peterson, (1996). In this model, reading performance depends on continuous interactions among the component processes that underlie word reading with the processes that underlie comprehension. In this study, comprehension monitoring and constructive comprehension processes are assessed and practiced mainly in the beginning reading skills, where children perform on activities using the three structured methodologies (phonics, whole language and interactive) for accurate reading and comprehension. The Foundational Exercises mainly teach and practice component foundational skills underlying word reading and spelling. Skills learned in exercises are applied and evaluated in the used instructional methodologies, and review activities are assigned as needed.

2.3.2 <u>What Underlies Poor Reading for Most Children</u>

Good reading comprehension is the goal of reading instruction. Yet, for most children with reading difficulties, poor reading comprehension is a secondary problem,

caused by inaccurate or inefficient word reading (Lyon, 1995; Rayner, Foorman, Perfetti, Pesetsky, and Seidenberg, 2001; Snow, Burns, and Griffin, 1998, and the Report of the National Reading Panel, 2000). Most of these children, often described with "specific reading difficulties", comprehend spoken material about as well as average readers, but they struggle with inaccurate or slow word reading (Wise and Snyder, 2002). Reading comprehension is obviously hindered when a child misreads a word. But even if the struggling reader becomes accurate in his word, his reading comprehension can still suffer if that word read remains slow and laboured and uses up so much attention that few cognitive resources remain for reading comprehension (Perfetti, Marron, and Foltz, 1996; Felton and Brown, 1990; Oyetunde, and Umolu, 1991).

For most of these children, weak phonological processes underlie their word-reading problems (Lyon, 1995; Rayner, Foorman, Perfetti, Pesetsky, and Seidenberg, 2001). Most seem to have "imprecise" or poorly differentiated phonological representations for words, reflected in subtle difficulties in spoken and heard language, such as in repeating nonsense words and in judging correct from incorrect pronunciations (Snowling, 2000, Elbro, Borstrom, and Peterson, 1998). Most children with reading disabilities also have weak short-term memory, weak phoneme awareness (the metacognitive ability to identify and manipulate sounds in spoken words) and weak phonological decoding skills (sounding out print to speech) (Lyon, 1995). These last two difficulties lead directly to problems in word reading and spelling, which lead to the secondary difficulties in reading comprehension (Perfetti, Marron, and Foltz, 1996; Felton and Brown, 1990). While inherited, brain-based factors relate to these difficulties (Frith, 1997; Gayan and Olson 2001; 2001; Shaywitz, 2003), a very encouraging research finding is that these weaknesses can indeed be remedied with intensive instruction that is designed to strengthen the underlying phonological processes and to

integrate them with extensive practice reading accurately in context (Wise, Ring, and Olson, 2000).

A small but interesting group of children has problems understanding text material, even though their phonological and word reading skills are intact at normal level (Wise and Snyder, 2002). These children have problems comprehending main ideas and making inferences, even in spoken material. They appear to have problems with higher level language skills such as recognizing syntactical relationships, pronoun referents, and making inferences (Nation and Snowling, 1999). This study addresses their needs currently within the structured methodologies; this will directly address the difficulties underlying weak oral comprehension.

2.3.3   <u>Preventing and Remedying Reading Difficulties</u>

Intensive structured, and sustained instruction in phoneme awareness and phonics, carried into extensive accurate practice in engaged reading for meaning helps most children with reading difficulties to improve their foundational skills and learn to read (NRP, 2001; Rayner,. Foorman, Perfetti, Pesetsky, and Seidenberg, 2001).

The younger the child begins this kind of instruction, the greater the benefit (Lyon, 1999; Torgesen, 2002, Torgesen, Wagner and Rashotte, 1997). Research consensus suggests the necessary components of good instruction which include phonological awareness, phonics (alphabet, decoding), fluency (sight words, automaticity and prosody), vocabulary, and comprehension (NRP, 2000; Rayner, Perfetti, Pesetsky, and Seidenberg, 2001). A remaining challenge in research and practice is to help these skills become automatic, or effortless, enough that they do not deplete the cognitive resources needed for comprehending while reading. Another challenge is to help children apply these skills in reading and writing in context, and to use them

independently after training is completed (Wise, 1999; Wolf, 1999; Wise, and Olson, 2000; Omojuwa, 1985).

This study proposes that lasting, accurate fluent, and independent reading should result from (a) integrated practice of foundational skills in engaging, imaginative ways, (b) to automatic levels, (c) with much application in fluent reading and writing in context, (d) both in and away from the teaching situation. This study is designed to help children learn, automate, and apply these skills in context.

2.4   PRINCIPLES THAT GUIDE INSTRUCTION

Some general principles guide instruction in the Foundation to Literacy programmes. Many of them are used in Linguistic Remedies (Wise, 2001 a and b, 2002) a reading instructional programme by the first author. The principle are also used in many good programmes and derive from many other educational theorists and practitioners (Kintsch, Steinhart, Stahl, Matthews, and Lamb, 2000; Kintsch, 1998). These writers suggest that students learn, maintain, and generalize best when they actively engage in learning tasks that challenge their thinking, while encouraging success. All the three structured instructional methodologies employed in this study aim to engage students, promote active thinking, and encourage success.

This study also incorporates the key principles of scientifically based reading research. The Report of the National Reading Panel (NRP, 2000) and a comprehensive review article (Rayner, Foorman, Perfetti, Pesetsky, and Seidenberg, 2001) summarize the implications of scientific reading research for instruction. This research suggests that balanced reading instruction covers five domains of reading with sequenced instruction that is intensive, explicit, structured and direct and that includes application in reading with comprehension and work towards fluency and automatically. The domains include

phonological awareness, phonics (alphabet, decoding, and spelling), fluency (automaticity and reading with natural expression), vocabulary, and comprehension.

Most reading professionals agree that these domains are important in balanced reading instruction. This study is designed to cover and integrate them well. It covers the five domains suggested by the National Reading Panel, and does it explicitly and intensively in carefully sequenced ways. Yet many professionals still wonder just how explicit and intensive the instruction must be for children with different levels of reading (Allington, 2002). It is believed that Foundation to Literacy will provide an excellent research tool for examining, and perhaps resolving, some of the questions about the best ways to teach the domains and the balance of instruction among domains for children with different needs.

2.5   DOMAINS OF FOUNDATIONAL READING KNOWLEDGE

The structured methodologies teach and practice competencies within the following essential knowledge domains, which are taught to students as determined by need in assessments and by progress within the experimental groups.

2.5.1   Alphabet and Letter-sounds

Learning the alphabet is essential before children can learn to decode, read, or spell. Letter knowledge becomes automatic with repeated correct experiences in naming letters and matching them with their sounds. In order to use letter-sound knowledge in reading, children must not only know the letters and their sounds, but they must know them so automatically that they can use them without effort (Samuels, 1985). A child who must use conscious effort to recognize a letter or use its sound will have little attention remaining for decoding words, much less for comprehension. Alphabet

knowledge in preprimary school has consistently been shown to be one of the two strongest predictors of later reading ability, along with phonological awareness (Unoh, 1984).

While children must recognize letters and know their sounds prior to learning to decode our alphabetic system, children vary widely and significantly in how well they know letters and sounds on entering school (Snow, Burns, and Griffin, 1998). Knowing letters' names may make learning their sounds easier, perhaps because letter-names usually include the sound of the phoneme somewhere in their name. Children often make use of this knowledge in their invented spelling (McBride-Chang, 1998; Treiman, 1993). Letter knowledge is an important precursor of phonemic awareness, and has been shown to influence early progress both in segmenting and blending sounds (Wagner, Torgesen and Rashotte, 1994).

Nevertheless, just teaching children the names of letters does not help reading much. Children need both the accuracy and the fluency that comes with the full knowledge of letter names and their sounds (Adams, 1990). Both letter-sound knowledge and phonological awareness are essential foundational skills needed for children to grasp the alphabetic principle and to understand how print and sounds go together in English. These skills bear a direct and strong relationship with early reading (Liberman, 1992).

While children must recognize letters and know their sounds prior to learning to decode our alphabetic system, children vary widely and significantly in how they know letters and sounds on entering school (Snow, Burns, and Griffin, 1998). Computer instruction has been shown to be one effective way of helping children with weak letter knowledge to improve this foundational skill (Torgesen, 1997; Wise and Olson, 1995). Computers are ideal for individualized instruction and also for the repeated, speeded practices necessary for helping skills such as letter recognition become automatic. Thus,

computers seem to be a great way to help level the playing field and help at-risk readers practice and improve some necessary prerequisite skills, while easing the need for one-on-one help from teachers.

2.5.2 **Phonological Awareness**

Phonological awareness is the conscious awareness of sound units in spoken words. It includes the ability to identify, count, and manipulate syllables (e.g. bas-ket-ball)), onsets and rimes which are the beginning (re-vocalic) and the rhyming (post-vocalic) parts of words (e.g., th-in, pl-ant), and phonemes, all within spoken syllables (e.g., th-i-n, p-l-a-n-t). Training phonological awareness usually includes identifying and manipulating all the above sound units within spoken words. Thus, phonological awareness activities may include syllable work, such as" say 'snowflake' without the 'snow;" rhyming activities, such as "say 'cart' without the /k/." Phoneme awareness training, on the other hand, involves counting, deleting, and manipulating just phonemes, as in the last example above.

Phonological awareness is an essential pre-reading skill. Phoneme awareness and alphabet knowledge are the strongest predictors of later reading progress through primary school and beyond. Interestingly, the development of phonological awareness is also reciprocal with learning to read and spell (Perfetti, Beck, and Hughes, 1987). That is, on the one hand, children need a basic ability to identify and manipulate sounds in syllables in order to grasp and use the "alphabetic principle" and learn to read. This "alphabetic principle" is the insight that English spelling represents the sounds, or phonemes, of words. On the other hand, in the process of learning to read, children do also improve in phonological awareness (Omojuwa, 1985)

Children vary greatly in their levels of phonological awareness both when they first approach learning to read and as they progress and improve in reading ability. And it is those children who cannot easily identify and manipulate speech sounds in syllables who struggle greatly with learning to read and spell. Happily, phonological awareness can also be improved with explicit and intensive training. Instruction in phoneme awareness leads not only to gains in this skill itself, but also to subsequent gains in reading and spelling (Rayner, Foorman, Perfetti, Pesetsky, and Seidenberg, 2001). Most studies show larger benefits from phonological awareness when it is linked with letters and sounds than when it is done in speech alone (Blachman, Tangel, Ball, Black, and McGraw, 1999; Brady, Fowler, Stone and Windbury, 1994; Byrne and Fielding-Barnsley, 1991). Studies of reading remediation among older children with reading problems have shown that these children also improve in reading after explicit work in phonological awareness and decoding (Hatcher, Hulme and Ellis, 1994; Torgesen, Wagner, and Rashotte, 1997, Wise, Ring, and Olson, 2000). Computer-assisted instruction has helped children improve phonological awareness and decoding in both early reading and reading remediation (Torgesen, 1997, Ring and Olson, 2000).

2.5.3   Reading Regular Words (decoding, or sounding-out)

Learning to decode words accurately is another important foundational skills for reading. Children with reading difficulties usually have specific difficulties with reading words and non words accurately, and this difficulty has been shown often to have a brain-based, inherited component related to phonological awareness (Frith, 1997; Gayan and Olson, 2001; Olson, Forsberg, Gaya, and De Fries, 1999; Shaywitz, 2003). Happily, much research has show that systematic and structured work on phonological awareness and the code can improve this skill, even in children with severe reading disabilities. In fact,

in most intervention studies that attempt to do this, the first noticeable gains will be in untimed sounding out of regular words and nonsense words.

"Regular" words refer to words with predictable letter-sound patterns. They can be sounded out by phonics patterns that have been taught. The more of these patterns that have been learned by phonics teaching or by reading experience, the more words can be considered to be sound-out words. Children with poor phonological skills often guess words from context and from the first sound, misidentifying many words even in context. Stanovich (1984) showed that poor readers rely on context for word recognition much more than good readers do; however they are also much weaker, not only in decoding, but also in their ability to use context (Oyetunde, and Umolu, 1991).

Misread words lead directly to mistakes in comprehension. Children need to learn to decode regular words accurately, and older readers still need good decoding for deciphering novel words and long words. Children, who have learned to decode words accurately, but slowly, can still have secondary problems in comprehension, because so few resources remain available for comprehension (Perfetti, Marron, and Foltz, 1996). While most struggling readers have had reading problems from the outset, research suggests that some struggling readers emerge later in primary four, in at least three ways (Lyon, 1999; Scarborough, 1998a; 2001):

(a) Some of these struggling readers have only moderately weak phonological decoding skills that have escaped attention so far during their schooling, but who now show problems as the reading system gets more complex and more resources are needed for comprehension.

(b) Some have slow word reading skills either (1) related to lack of practice(Cunningham and Stanovich, 1998; McBride-Chang, Manis, Seidenburg, Custodio, and Doi, 1993) or (2) related to slower speech or access of words.

Slower access of words is often measured by tests of Naming Speed, or how many familiar letters a student can read in say, 45 sec (Scarborough, 1998b).

(c) Finally, some do have specific comprehension problems, which can be noticed even in listening comprehension of spoken passages. Often, this may not get noticed until spoken and written text becomes more complex in later elementary and secondary school.

Developing strong and then fluent decoding skills can help alleviate some problems, at least those due to reasons a and b (1) above. Many remediation studies have succeeded at helping children to learn to decode accurately by improving their phonological awareness and then teaching them the regular patterns of English in a systematic, structured and intensive way. Yet the challenge remaining for most studies is to get reading rates to average levels. We believe computers are perfect tools to improve automaticity, given their ability to time items, individualize activities by adapting to the student's performance, provide repeated practices, and give immediate rewards based on performance. In a pilot study (Wise, Ring, and Olson, 1999), students were extremely motivated by speed trials with words after they had learned to read them accurately. Recent work by Breznitz (1997a) supports that fluency and automaticity can be improved, and that this also leads to improvements in comprehension. Therefore, after students learn to decode words accurately with the programmes, they also practice the patterns until they become accurate, fast, and easy, so they demand few cognitive resources while reading.

2.5.4   Spelling of Regular Words (encoding)

Besides learning to communicate sounds clearly in writing, learning to sound out regular words in spelling is extremely important for its benefits to phonological

awareness, to decoding, and to reading (Ball and Blachman, 1991; Blachman, Tangel, Ball, Black, and McGraw, 1999). Earliest readers often learn to decode print, or to sound words out, by first learning to blend sounds together and spell them. Learning to represent the spellings of words reasonably, with appropriate vowel sounds and with sounds in order, improves phonological awareness and decoding, which both underlie the ability to understand and use the alphabetic system in reading.

Hiskes (2002) recently found the same pattern of results (of gains in reading, phonological awareness, and spelling from learning to spell phonetically, but not from just learning letter-sound associations), in a kindergarten training study using a powerful "talking" computer program.

In a study in a summer reading clinic, Wise and Olson (1992) found that exploring spelling with a "talking" computer programme improved the ability of poor readers to decode novel nonwords, especially when they could compare pronunciations of their errors with the correct word, besides getting feedback about letter placement. Spelling's importance in strengthening decoding is probably the most important reason for including it in a balanced reading programme. It is the main reason to include spelling in the Foundational Exercises. (McEwan, 2002).

2.5.5 Reading Sight Words (orthographic coding), for Accuracy and for Fluency.

"Sight words" is the term most teachers use for high-frequency words. Some have predictable phonics patterns, as in "that' and "here," and some have unpredictable patterns, as in "what" and" "were". If these are known automatically, or without the need to sound them out, reading becomes much more efficient. Reading sight words automatically does still involve some phonological coding (Van Orden, 1987). However, it depends mainly on orthograhic coding, the coding or memory of specific spelling

patterns. Just as children differ in their proficiency with hearing sounds in words and in decoding print to sound, children also differ greatly in how long it takes them to build up strong, automatic orthographic images for words: Van Daal and Reitsma, (1993) found that primary two children who read normally needed far fewer correct practices with a word to maintain the ability to read it than did children with reading disabilities. While orthographic skill has a genetic component, it is highly influenced by reading experience (Gayan and Olson; 2001; Stanovich and Cunningham, 1992). Children improve in time-limited "sight" reading from accurate reading in text (Wise, Ring, and Olson, 2000), and they improve with training in sight reading and spelling activities (Ehri, 1998).

2.5.6 **Spelling of Sight Words (orthographic encoding).**

Learning to spell high-frequency words has obvious benefits for intelligible and intelligent-looking written communication. Beyond that, Ehri (1998) has demonstrated that spelling words improves children's orthographic images of them. Having strong and accurate orthographic or spelling images may have another benefit beyond helping spelling and decoding. It may also develop stronger, and perhaps more automatically retrievable mental images for words. A precise and strong mental representation for a word includes many kinds of information. Current interesting studies point to the importance of strengthening the entire "word form" for words – including their phonology, orthography, morphology, history, and meanings (Berninger, Abbot, Billingsley, and Nagy; 2001; Wolf and Katzir-Cohen, 2001). It is possible that strong orthographic mental images not only strengthen accuracy in word reading, but also lay the groudwork for later automaticity in reading, which in turn helps comprehension.

2.5.7 <u>**Additional Domains: Specific Comprehension Difficulties, Vocabulary, and**</u>

<u>**Articulation Training**</u>

Thus far emphasis has been on knowledge domains related to foundational word decoding and encoding processes. These correspond to specific instructional methodologies, which teach foundational competencies that are practiced until automatic, to overcome slow or inaccurate word reading that can secondarily impede comprehension. The following paragraphs describe some other knowledge domains for which there is plan to develop reading skills, with an eye towards research about interesting instructional questions and towards helping more children with individual needs in these areas.

A smaller group of children exists whose higher-level language difficulties hinder their comprehension directly, even in spoken language (Nation and Snowling, 1998a & b; Stothard and Hulme, 1995, 1996). These children are rarer than those whose problems stem from word-reading difficulties. The study involves the methodologies for them that will help with processes and strategies to help them learn to make and justify connections in text for use in finding main ideas and making inferences. Such approaches are designed to help them recognize, explain, and use cohesive devices such as pronoun referents and syntactic cues that could help them notice and make connections in text (Cain and Oakhill, 1998).

A final future domain is awareness and practice of articulatory features of sounds for phoneme discrimination and as a potentially stronger base for phonological awareness. It could be used as an option by teachers who like this approach, and it is likely to be of special importance also for non-native speakers who are learning to read English. It may provide a platform for studying an interesting educational question, and it might prove particularly beneficial with the weakest phonological awareness or with

imprecise speech (Wise, Ring, Sessions, and Olson, (2000); Elbro, Borstron, and Peterson, 1998). Some research has not found differences in phonological awareness taught with or without an articulatory base, particularly with computer support (Torgesen, 1998; Wise Ring and Olson, 1999). However, another researcher did recently find an advantage for teaching phonological awareness with an articulatory base without a computer (Castiglioni- Spalten and Ehri, 2003). The work of Elbro (1998) and Snowling and Hulme (1994) also lend support for the possibility that refining articulatory knowledge and precision could improve the preciseness of underlying phonological representations of poor readers. For all these reasons, the question may be worth studying further with a system where the teaching could be supported with an accurate and explorable animated mouth, and where thoughtful questioning and guided hints can support children's active problem-solving as was not done in the computer assisted studies.

2.6   LITERACY INSTRUCTION

Many teachers in classrooms today may be unfamiliar with the emerging concept of literacy instruction; indeed, literacy instruction is a fairly new concept and incorporates more than merely the basal reading instruction procedures practiced by many of today's teachers (Bender, 2002). Literacy approaches focus not only on the phoneme-based instruction (Bos, Mather, Silver – Pacuilla, and Narr, 2000; Patzer and Pettegrew, 1996; Smith, Baker, and Oudeans, 2001) but also on the students' ability to speak, write, and listen effectively and to use these literacy skills in their daily work in a variety of school settings (Winn and Otis – Wilborn, 1999). The emphasis on a literacy approach is on the interrelationship between reading, writing, and language, and tactics such as story retelling that involve several of these areas are forwarded, that is, using a

language-based process to teach reading (Craig, Hull, Haggort, and Growder, 2001). Furthermore, there is a growing emphasis on assisting struggling readers to improve their literacy, rather than focusing on remediation of specific reading deficits (Dayton-Sakari, 1997; Oyetunde, and Umolu, 1991).

2.6.1   <u>Research on Literacy Instruction</u>

Research on early literacy instruction has been summarized in a variety of sources (Bos, Mather, Silver-Pacuilla, and Narr, 2000; Kameenui, Varnine, Dixon, Simmons, and Coyne, 2002; Patzer and Pettegrew, 1996; Smith, Baker and Oudeans, 2001). For example, the research has supported a strong phoneme-based instructional approach for students with special reading needs (Kammeenui, Varnine, Dixon, Simmons, and Coyne, 2002). Next an emphasis on oral reading fluency is also recommended because students are often called on to read orally in class across the class levels. Again, early instruction in reading should be quite robust, that is, instruction should be under-taken with sufficient intensity to assist students in reaching their early reading goals. (Bender, 2000).

Research has also shown that, for young readers who lag behind others, especially in the early primary school classes, phonological instruction is even more important in their early literacy instruction (Andzayi, 2001). The good news from the research is that phonological awareness is a "teachable" skill, and adequate instruction in that area will enhance the reading of students even older students who display subsequent reading disabilities (Kameenui, Carnine, Dixon, Simmons, and Coyne, 2002; Smith, Baker, and Oudeans, 2001).

2.6.2   <u>Phonological Awareness Instruction</u>

One aspect of early literacy instruction that is heavily emphasized is phonological awareness (Kameenui, Varnine, Dixon, Simmons, and Coyne, 2002). Within the past decade, research has documented that phonological awareness is both a critical component of many subsequent language arts and literacy skills (Bos, Mather, Silver – Pacuilla, and Narr, 2000), as well as a primary deficit area for many students with learning disabilities (Kameenui, Carnine, Dixon, Simmons, and Coyne, 2002; Moats and Lyon, 1993). Based on recent research, a general consensus has emerged that students with learning disabilities demonstrate an early inability to manipulate phonemes, and this inability is the primary cause of subsequent learning disabilities in a wide variety of areas (Moats and Lyon, 1993). For this reason, it is critical that every general education teacher in the lower classes understand the concept of phonological awareness and have access to several phonological awareness instructional strategies (Umolu, 1985).

Phonological awareness, though intimately related to phonics, is not the same as phonics (Chard and Dickson, 1999). Whereas phonics involves the relationship between letters and their related sounds, phonological awareness represents the ability to detect and manipulate discrete sounds, and thus phonemic manipulation skills precede skills in phonics. Furthermore, there is a hierarchy of phonemic manipulation skills that precede skills in phonic, and is a hierarchy of phonemic manipulation skills that students must master (Kameenui, Carnine, Dixon, Simmons, and Coyne, 2002, p.58). For example, most theorists suggest that detecting similar sounds (rhyming) is a phonemic skill that precedes detecting different initial sounds, that is, the difference between the first sounds in "cat" vs "hat" (Bender, 2002, Umolu, and Oyetunde, 1997).

After a student can manipulate sounds in this fashion, the student must be trained in the alphabetic principle (sometimes referred to as the alphabetic code) – the idea that

the forty-four different phonemes in the English language may be represented by twenty-six letters or combinations of those twenty-six letters (Sousa, 2001b). This instruction in the alphabetic code is referred to as phonics and involves a process of mapping speech sounds to written or printed letters. Thus, phonics instruction proceeds only after a student has mastered phonemic awareness and phonemic manipulation (Kaneenui, Carnine, Dixon, Simmons, and Coyne, 2002, pp 58 −65). Furthermore, students must learn letter sounds and these phonemic manipulation skills to a very high level of automaticity to learn to read fluently.

With this distribution between phonics and phonological instruction noted, it is immediately apparent that merely teaching students "letter sounds" may not be enough for students with learning disabilities because those students may not be able to discriminate between the various letter sounds anyway (Bender, 2002). Thus, instructional activities in phonological awareness skills are necessary for many students with learning disabilities (Smith, 1998). Typically, phonological instruction would precede instruction in phonics itself and may begin as early as preprimary (Bender, 2002). However, for students who have not mastered phonemic awareness and manipulation skills, even as late as elementary classes to secondary school, this instruction must precede higher level instruction in reading (Kameenui, Carnine, Dixon, Simmons, & Coyne, 2002, pp. 50 – 55).

2.7   THE GREAT DEBATE

For many years, the best method in which to teach children to read and write has been discussed, debated and deliberated at length. Educators have felt tremendous pressure to choose between two dynamic and completely divergent schools of thought, each of which has its own long list of benefits and shortcomings. Traditional curricula

proponents are adamant that reading instruction should reflect a time –honoured reliance on phonics, which is essentially a rigorously structured, repetitive and uncreative approach to learning (Adams, 1990). However, in recent years, numerous educators have begun to embrace a "whole-language" approach instead; a method that is far more liberal and creative than the traditional phonics techniques (Mann 1993). The whole-language approach has become so popular in certain areas that it has ignited a powerful pro-phonics backlash (Bender, 2002). This has further fueled the debate, causing pro-phonics and anti-phonics advocates to but heads more furiously than ever before. Many experts anticipate that the current debate will ultimately lead to a healthy balance between the two approaches, cordially blending the best of the new methods with the best of the old.

2.7.1   <u>Whole Language Method</u>

The whole language approach signifies an entirely different perspective in teaching, learning, and the role of language in the classroom than phonics instruction employs. It emphasizes the need for children to use language in ways that relate to their own lives and cultures. The premise of the whole language approach is that it encourages students to focus solely on "reading to understand" Umolu, (1997).

Weaver (1995) defines the whole language approach as a belief system about the nature of learning and how it can be fostered in classrooms and schools. In whole language, language is kept whole, not fragmented into "skills" Literacy skills and strategies are developed in the context of authentic literacy events, while reading and writing experiences permeate the whole curriculum. Learning within the classroom is integrated within the whole life of the learner.(Bender, 2002; Umolu, 1997).

Proponents of whole language believe that children should learn to read without direct instruction; similar to the way they acquired language. In a typical whole language

programme, children read and write daily in the context of meaningful literacy activities. They use cues from print, such as configuration clues and context clues, to decode words. They are taught to recognize whole words by memorizing them one word at a time. Whole language is not like the phonics approach, in which children learn syllables and phonetic word-attack skills that allow them to decode unfamiliar words. Reading, oral, and written language are considered as a whole rather than as separate skills (Orange, 2002), and is most effective when children are allowed to learn by doing, that is, they learn by doing-preferably, without fear, ridicule, embarrassments, or shame (P. 119).

The whole language instruction programme has come under fire and gained notoriety as one of the opponents in the famed "reading wars". Opponents are harshly critical of the whole language programme. Williams (1994) refers to whole language as dressed-up version of the obsolete, discredited look-say technique of reading. Some parents and educators, however, are concerned that teachers do not correct grammar and spelling in the whole language programme. Their worst fears are that this practice will spawn a generation of poor speakers and illiterates (Orange, 2002); but, whole language is a good idea, but the call for a balance of whole language and phonics has echoed through the literature in recent years, as most educators and parents want to see the end of the reading wars (P.119).

2.7.2 __Phonics Method__

Phonics supporters generally agree that by employing a direct approach in regards to instruction, as well as providing an undeviating focus on logical sequencing and multi-sensory techniques, students will effectively learn to identify words quickly and consistently, as well as improving their spelling, vocabulary, handwriting, listening,

and thinking skills (Price, 2006). Numerous studies have shown that the most critical factors underlying fluent word reading are the ability to recognize letters, spelling patterns, and whole words effortlessly, automatically, and visually (Staresina 2003).

When statistics in this arena materialize, it adds weight to the phonics argument, almost to the point of tipping the scales to their side. However, it is important to keep in mind that tipping the scales in a certain direction so that one party can win is not the most honourable of goals when it comes to educating our children and securing our nation's future (Lyon, 2004). The objective should be an equitable balance between the two approaches so that students are able to reap the benefits of both types of instructions, while the negative aspects are able to cancel each other out (Kennedy, 1997).

Phonics is an approach to reading instruction that focuses on learning the names and sounds of the 26 letters of the alphabet, letter-sound relationships, combinations of sounds and word sounds (Orange, 2002). There are two approaches to phonics instruction, implicit and explicit (Hiskes, 2000:26). Implicit phonics, most often taught in today's schools, stresses a whole-to-part approach in which the reader starts with the word and tries to guess it using configuration clues, context clues, beginning and ending letters, and so on (Orange, 2002). The explicit approach, which was used in teaching phonics years age, involves moving from the smallest part to the whole. Students learn letters, then sounds, combinations, and words. Phonetic instruction may vary with explicit phonics (Hiskes, 2000): (a) Phonemic awareness, or the knowledge that each letter has its own speech sound; (b) knowledge of the interrelationships of letters and sounds; that there are approximately sounds that can be combined in about 70 ways; (c) sounding out letters, blends, and words; (d) using configuration clues, tracing letters; (e) using decodable texts, or texts that reflect skills and knowledge previously taught, to reinforce skills and practice reading.

Phonics analysis was also important, whereby the child could break a word down to its smallest part and reconstruct it by knowing the speech sounds of consonants and vowels and how to blend the sounds back into words (Orange, 2002). Phonics is at the heart of the controversy commonly known as the reading wars, which pits the phonetics instruction strategy against those of the whole-language approach.

2.7.3 **Interactive Method**

The balanced reading approach provides the most viable alternative to the extremes of pure phonics or whole language. A combination of both approaches generates an effective mixture of instructional philosophies, and therefore accommodates a wide variety of learning styles (Orange, 2002). The curriculum needs to allow creative freedom for teachers to search and find the balance in their own classrooms (Coles, 2003) combining quality literacy with information about letters and sounds, children have the disposition to read and obtain the tools they need to become proficient readers, writers and human beings.

The sensational exposure on widespread illiteracy that was rampant early in the 20th century marked the onset of the famed "reading wars" that would rage on for decades. The public entry was that schools were not teaching children how to read − who or what was to blame? (Allington, 2002). Over the years, the gradual emergence of reading techniques based on various philosophies sparked the controversy known as the reading wars. At the centre of the reading wars debate was the issue of which reading technique was effective and which was ineffective (Orange, 2002).

From the 1970s until about 1990, phonics was king. Phonics teaches blending the phonetic sounds and syllables of the English language together into words. Phonics was the predecessor, and a respected method of teaching reading, but was not without its

critics. During the 1990s, "whole language" enjoyed popularity. After a few years, it was attacked and criticized to a battle cry of "back to basics" (Coles, 2003).

Amidst the finger pointing of proponents and opponents of both whole language and phonics, the question loomed, which was better? Phonics or whole language? Around the late 1990s, educators started entertaining the possibility that it could be both (Orange, 2002). Ausselin (1999) proposed combining whole language and phonics into a balanced reading programme, referred to as balanced literacy (Allington, 2002). Balanced literacy is a recognition that the two approaches to reading are different, yet complementary, and when used appropriately can yield very effective results. Balanced or interactive approach (to reading) involves the integration of listening and speaking within an independent or group reading and writing format (Orange, 2002).

Taylor, Anderson, Au, and Raphael (2000) were highly critical of the fact that the reading abilities of the students in the study were tested using words and non words to demonstrate their mastery of sound-spelling correspondences rather than connected text and sight words. They assert that Foorman and her colleagues focused unduly on instruction in word-level processing as the key to successful beginning reading and were concerned with only one aspect of literacy learning. Foorman, Fletcher, Francis, and Schatschneider (2000) observed thus:

> *We do not assume that training children to read words and pseudo words will enable them to read cohesive text. What we do claim is that children who are unable to read words and pseudo words will not be able to read text at age level (P.31).*

Taylor, Anderson, Au, & Raphael (2000) do a major disservice to practitioners everywhere by relegating the alphabetic principle to a secondary role in the acquisition of literacy. Principals and teachers who have seen dramatic increases in literacy attainment in low-performing schools have used precisely the kind of direct code instruction found to be most effective in the Foorman study (Antrim, 2001; Dobberteen,

2001; King & Torgesen, 2000, & McEwan, 2001a). These instructional leaders know that without a foundation of phonics, the majority of their students would still be falling through the cracks. Successful teachers and administrators also know, however, that phonics is only one piece of the reading puzzle. Without ongoing instruction in cognitive strategies, the continual development of language skills, the deepening of knowledge through solid content area instruction, voluminous reading in all types of text, and daily opportunities to talk and write about what is read using the conventions of spoken and written language, any gains realized in the classes will disappear by the upper classes (McEwan, 2002). Conversely, without a phonics foundation, students would not even have the option of becoming literate (Foorman, Fletcher, Francis, & Schatschneister, 2000).

2.7.4   <u>Spelling</u>

Moats (1995) observes that English spelling is an indirect and complex rendering of speech, and there is often no direct, one-to-one correspondence between letters and speech sounds in English orthography. Not only are sound-symbol correspondences varied and complex, but also spelling represents meaningful segments and often contains information about a word's language or origin (McEwan, 2002).

Spelling is not very popular in classrooms and schools these days, and where spelling instruction is found, it is likely to be taught from poorly designed curricula by inadequate teachers (Ehri, 1998). Reading is a decoding process that moves from symbol to sound, and spelling is an encoding process that maps from sound to symbol (McEwan, 2002). Treiman (1993) recommends that "(children)" should learn as soon as possible that every word has a conventional spelling … and that even if they do not yet know a word's conventional spelling, they will learn it when they get older" (p.290). She also

points out that phonological training will have a beneficial impact on spelling. Foorman (1995) suggests that direct instruction in spelling begins by midyear primary class one rather than later for two reasons: (a) those students at risk of falling through the cracks will have the most difficult time with spelling, and (b) the teacher cannot assume that the knowledge gained from reading will automatically transfer to spelling without direct instruction (p. 382).

Effective spelling instruction must be focused and contain far more repetition for at-risk students than one would use with good spellers (McEwan, 2002); and "without studying the word's spelling, there is no opportunity for increasing its visual familiarity" (Adams, 1990, p.217).

2.7.5 <u>Fluency</u>

Kameenui and Simmons, (2001) observe that anyone who has been in the presence of a child or young adult unable to read in appropriate level passage with the words executed accurately, effortlessly, and instantly, one after another with unwavering prosody understands why reading fluency is elusive and bewitching (p.203). Fluency, "rate and accuracy in oral reading" (Hasbrouk & Tindal, 1992; Shinn, Good, Knutson, Tilly, & Collins, 1992) is frequently the forgotten piece of the reading puzzle; and has never generated the popular books, workshops that have arisen around word walls, running records, and literature-based instruction (McEwan, 2002).

As low profile as reading fluency may seem to be, it is highly correlated (.80) with the ability to comprehend what is read (Fuchs, Fuchs, Hops, & Jenkins, 2001). In fact, measures of oral reading fluency have been found to be more highly correlated with reading comprehension scores than were measures of silent reading rate in a sample of children whose reading skills varied across a broad range (Jenkins, Fuchs, Espin, Van

den Broek, & Deno, 2000). As students develop fluency in their oral reading, their comprehension scores will also improve (Burns, Griffin, & Snow, 1999). Fluent and oral readers (given similar knowledge of the vocabulary and concepts in the text) are better able to understand what they read than are their dysfluent peers (McEwan, 2002).

The National Research Council concluded, "Adequate progress in learning to read English (or any alphabetic language) beyond the initial levels depends on sufficient practice in reading to achieve fluency with different texts" (Snow, Buuns, & Griffin, 1998, p.223). The report also recommends that:

> *Because the ability to obtain meaning from print depends so strongly on the development of word recognition accuracy and reading fluency both should be regularly assessed in the classroom, permitting timely and effective instructional response when difficulty or delay is apparent. (P.7).*

Fluency difficulties are directly attributable to the inability of readers to identify words quickly and accurately (Wise, Ring, & Olson, 1999). During the past two decades, research has provided educators with overwhelming evidence of the critical role that phonological awareness skills play in learning how to accurately identify words (Wagner, Torgesen, & Rashotte, 1994). Dysfluency or reading-disabled students are almost always phonologically deficient (McEwan, 2002). They may also have another problem, however. There has recently been a great deal of hypothesizing about a second deficit that affects many students' abilities to read fluently: visual naming speed, sometimes referred to as RAN or rapid automatic naming (Wolf, 1991, 2001).

Some researchers have included visual naming speed under the broad umbrella of phonological awareness skills, whereas others have argued for what is called a "double deficit" hypothesis (Wolf and Bowers, 1999). There is evidence to suggest three types of disabled readers: (a) students with phonological processing difficulties, (b) students with naming-speed deficits, and (c) students with both phonological and speed problems, that

is, double deficits; (Wolf 1991). Any of these deficits can interfere with oral reading fluency (McEwan, 2002). Still others (Stein, 2001; Stein & Talcott, 1999) are calling for renewed attention to the role of vision in learning to read, hypothesizing that reading depends not only on the quality of the brain's processing of auditory input to determine the phonological structure of words but also on the brain's processing of visual input to acquire good orthographic skills (McEwan, 2002).

The research of the past 20 years has focused intensively on phonological awareness and its critical importance in learning to read and has provided educators with a variety of options for the identification, prevention, and remediation of phonological awareness deficiencies (Torgesen and Mathes, 2000). The intervention options for students with a double deficit (phonological awareness deficit must feature specialized teaching designed to automatize student's skills (Faweet and Nicolson, 2001; Kameenui, Simmons, Good, and Harn, 2001; Levy, 2001; Lovett, Steinbach, Frijters, 2000; Torgesen, Rashotte, and Alexander, 2001, Wolf, Miller, and Donnelly, 2000).

The National Reading Panel (2000) chose to investigate fluency as part of its comprehensive review of reading research and concluded that "repeated reading and other procedures that have students reading passages orally multiple times while receiving guidance or feedback from peers, parents, or teachers are effective in improving a variety of reading skills (p.20). The panel went on to explain that "these procedures are not particularly difficult to use; nor do they require lots of special equipment or materials (McEwan, 2002).

2.7.6 <u>Comprehension</u>

Comprehension, the ability to construct meaning from text, is the overall aim of reading (Hirsh, 2003). Having the mechanics of decoding-being able to accurately and

automatically identify words – is a necessary but insufficient skill to gain meaning, the ultimate goal of reading (McEwan, 2002). Without comprehension the meaning pieces of the reading puzzle-language, knowledge, and cognitive strategies even those students who know how to read will continue to fall through the cracks in large numbers (p.66). The strategic readers stand out in their respective cooperative groups. They reread, ask questions, think-aloud, and are highly motivated to "get it" (Gunning, 2003). They use a variety of strategies to construct meaning from the text and are confident in their abilities to understand (Hirsh, 2003). Perfetti, Marron, and Foltz (1996) point out that a reader's willingness to expand effort at deep comprehension is critical to gaining meaning from challenging text (P.159). Low achieving students, and non-native-English-speaking students are especially hard-hit by both "linguistic poverty" (Moats, 2001) and academic deprivation (McEwan, 2002).

Linguist poverty, as defined by Moats (2001), includes partial knowledge of word meanings, confusion regarding words that sound similar but that contrast in one or two phonemes, limited knowledge of how and when words are typically used, and knowledge of only one meaning or function of a word when it has several. McEwan (2002) coined the term "academic deprivation" to describe the lack of opportunities that students have had to learn academic habits and skills by observing competent adults. Students need a wide range of opportunities to serve cognitive apprenticeships in both reading and writing (Schoenbach, Greenleaf, Cziko, & Hurwitz, 1999), through observing the behaviours and listening to the thinking aloud of skilled practitioners. Only then will they acquire the strategies and have the confidence to tackle difficult reading assignments (McEwan, 2002).

Although we can teach most linguistically poor students how to read using best instructional practices, and we can enable them to read and understand primary text with

strong instructional support, the durability of their achievements is suspect (Moats, 2001), unless an ongoing language development is provided (McEwan, 2002). Language development is inextricably linked to reading success (Biemiller, 1999), and educators must intentionally develop language skills, both oral and written in early primary school pupils (Umolu, and Oyetunde, 1997b).

2.8   RESEARCH FINDINGS ON TEACHING READING

It may be considered appropriate here to turn to research findings related to how to best teach reading skills. It is good to begin by reviewing two well-known summaries of research on teaching reading and then providing overviews of the finding of two recent reports on the issue: the National Reading Panel (NRP; 2000) report and a report of the National Research Council (NRC) called *Preventing Reading Difficulties in Young Children* (Snow, Burns, and Griffin, 1998). Discussion is then turned to a laboratory and classroom studies.

2.8.1   <u>Critical Review of Analysis</u>

The questions surrounding how reading is most effectively taught have been the object of several comprehensive reports over the years, including two major books (Adams, 1990). The question at the centre of Chall's "Great Debate" review was, what does evidence have to say about the effectiveness of direct instruction – explicit phonics-compared with whole-language instruction or implicit phonics? Should beginning instruction focus on directly teaching the correspondences between letters and sounds (phonemes)? The logical answer to this question appears to be that these correspondences, and the alphabetic principle they instantiate, should be the central initial focus of instruction. However, the tendencies of actual practice have been

otherwise. As noted earlier, a variety of alternative pedagogies have emphasized instead meaning-focused instruction built around story reading exposure to print and enhanced language environments. (Rayner, Foorman, Perfetti, Pesestcky, and Seidenberg, 2001).

These alternatives are too varied to capture with a single characterization. For example, when Chall coined the term "Great Debate", the alternative to direct instruction was whole-word teaching in which basal readers and limited (and later) phonics instruction were typical components. In the past 20 years, the dominant alternative has been whole-language instruction. Chall's conclusion, based on a careful analysis of some 22 programmes, classroom observations and reviews of public studies, was that children who received direct code-based instruction (emphasis on decoding or phonics) tended to have higher achievement in the first three grades than did children in whole-word classrooms (Bender, 2002). Although initially, for beginning readers, whole-word classrooms performed better on measures of comprehension and reading rate, in later grades the advantage of decoding-based instruction became highly general, encompassing spelling, word recognition, and comprehension. This conclusion, in its general form, was confirmed in later less comprehensive reports (National Reading Panel, 2001).

Adams (1990) provided a thorough treatment of these research reports and, more generally an evaluation of teaching methods in the context of research findings. Furthermore, she put the "Great Debate" in its historical context and explained why there has been so much resistance to the direct teaching of decoding. An emphasis on meaning and comprehension not only coincides with the main goal of reading, but also appeals to beliefs that the child's experience in school should reflect purposeful learning in authentic contexts. In that spirit, the exclusive use of commercially published children's literature (which is often not decodable) has become characteristics of whole-language

classrooms. Modern phonics advocates point out that there is nothing incompatible between these meaning values and good phonics instruction, which aims to quickly provide the child with the basics of the letter-sound system of practice with decodable texts while at the same time introducing children's literature. Like Chall, Adams argued that phonics approaches were more successful than nonphonics approaches in teaching children to read.

2.8.2   The National Research Council (NRC) report

The NRC (the research arm of the National Academy of Sciences) revisited this issue in its report "Preventing Reading Difficulties in Young Children" (Snow, Burns, and Griffin, 1998), while reports that have focused on the question of how to teach reading, the NRC report asked how available research findings can inform recommendations directed at reducing children's reading difficulties. Although the NRC report steered clear of specific curriculum recommendations, it emphasized the importance of promoting knowledge and practice in decoding. For example, it recommended that early primary school instruction "designed to provide practice with the sound structure of words, the recognition and production of letters, knowledge about prints and familiarity with the basic purposes and mechanisms of reading writing" (p.322). It concluded that research shows that beginning reading "depends critically on mapping the letters and the spellings of words onto sounds and speech unit that they represent" (p.321). Furthermore, counter to the idea that somehow comprehension can proceed on its own, the report added that "failure to master word recognition impedes text comprehension" (p.321).

The reports focus on language and literacy experiences prior to school and on the importance of decoding knowledge as a goal of beginning reading instruction achieves a

meaningful balance. It is clear that coming to school with certain relevant skills (some degree of phonological awareness) and dispositions (an interest in books) eases the burden of school instruction. It is equally clear that schooling can organize its efforts along the lines supported by research making sure that children acquire the ability to decode words and have sufficient reading practice to gain fluency and increase comprehension.

In 1997, the U.S Congress asked the National Institute for Child Health and Human Development and the Department of Education to convene a Committee to examine applying reading research to classroom practice. Topics studied by the NRP were alphabetic (phonological awareness and phonics), fluency, comprehension, how teachers can be taught to teach reading better in certification and professional development programmes and the use of computer technology in reading instruction.

The NRP (2000) study is valuable for what it found in the alphabetic area and what it did not find in the other areas (the Committee decided that there was generally not enough good quality research to make valid conclusions in some areas). The report noted the validity of the research discussed previously in the section on phonological awareness. With respect to phonics instruction, the report revealed that (a) systematic phonics instruction produces significant benefits for students in kindergarten through primary six and for students with reading disabilities, (b) the impact of phonics is strongest in the early primary school classes, and (c) phonics must be integrated with in phonological awareness, fluency, and comprehension. The report noted that a strong empirical base supports the importance of instruction in phonological awareness, in conjunction with phonics instruction, for the beginning states of reading instruction. However, the report also noted that there are not enough data to draw conclusions about

the best way to teach vocabulary, fluency and comprehension, or the best way to prepare teachers to teach reading.

2.8.3 <u>Laboratory Studies</u>

The results of some important experimental studies (Rayner, Foorman, Perfetti, Pesetsky, and Seidenberg, 2001) suggest two interrelated conclusions. First, learning correspondences between letters and sounds is more productive (so there is more transfer to new words) than learning whole words, even though learning whole words may be faster at first. Second, providing instruction that lets children infer these correspondences may not be as effective as directly teaching them. The first conclusion was demonstrated through training of two groups of adult subjects to respond to novel visual stimuli. One group learned to make phoneme responses to individual Arabic letters, whereas the other group learned to make word responses to strings of Arabic letters. In each case there was a 1:1 correspondence between the graphic stimulus and the pronunciation. In the case of single letters, the correspondence was between the letter and the phoneme, in the case of the words, the correspondence was between the printed word and its pronunciation.

Although training was faster for the whole-word group than the letter-phoneme group, transfer showed the opposite result: The letter-phoneme group could read many more words than the whole-word group. A similar study was carried out using kindergarten children and a set of specially constructed letters (Rayner, Foorman, Perfetti, Pesetsky, and Seidenberg, 2001). They found that children who had learned the sounds of individual letters could correctly read many more new words than could children whose training required them to learn whole words. Although both groups learned the intended pronunciation of the new words, the word group needed twice as many trails as the letter group to reach this level performance.

The laboratory research has long established the value of learning letter-sound correspondences for productive transfer of reading skill. Other laboratory studies with children have shown how difficult acquiring these correspondences can be in the absence of instruction (Byrne, 1984). Byrne (1991) taught young children to read one-syllable words by pairing the words with their meanings; for example, "fat" was associated with a picture of a "fat boy" and "bat" was associated with a picture of a bat. Then with the pictures withdrawn, the children demonstrated that they could read the words alone.

One might think that the children had inferred that the "f" made the /f/ sound, because the "f" was the only letter that distinguished "fat" from "bat" and the phoneme /f/ was the only sound that distinguished the spoken word "fat" from "bat". But instead, the children were unable to demonstrate that they had learned this association. When they were asked to judge whether the printed word "fun" said "fun" or "bun", their responses were incorrect about as often as they were correct. Thus in at least some conditions, children do not spontaneously infer letter-sound correspondences on the basis of being able to read whole-words. This finding reinforces the importance of teaching children directly what they need to learn (Rayner, Foorman, Perfetti, Pesetsky, and Seidenberg, 2001; Andzayi 2001).

2.8.4 Classroom Studies

Classroom studies of teaching reading typically have compared phonics instruction with some form of nonphonics (whole-word or whole-language) instruction. As noted, there have been many readers of such research (Adams, 1990) in addition to the NRC (Snow, Burns and Griffin, 1998) and NRP (2000) reports. All of these reviews concluded that systematic phonics instruction produces somewhat higher reading achievement for beginning readers compared with the nonphonics alternative. Results are

most impressive for students at risk for reading failure, such as children with learning difficulties (Rayner, Foorman, Perfetti, Pesetsky, and Seidenberg, 2001).

The U.S. Office of Education conducted the Cooperative Research Programme in First Grade Reading Instruction. These studies are commonly referred to as "the first-grade studies" (Snow, Burns, and Griffin, 1998). Experts concluded from these studies that classroom approaches that emphasized (a) systematic phonics, (b) reading for meaning in vocabulary-controlled text, and (c) writing produced superior achievement compared with approaches that relied on mainstream basal readers that did not include phonics (only recently have systematic phonics instruction and decodable text been incorporated into mainstream basal reading series). They found a definite advantage for code-emphasis approaches but concluded that no single method worked for all teachers or all children. Phonics proponents emphasize the first part of the conclusion; whole-language proponents emphasize the latter part of the conclusion. Only recently have the multilevel modeling and statistical techniques become available to test for the separate and interactive effects of characteristics of students, teachers and programmes.

Evans and Carr (1985) evaluated two programmes in 20 first-grade classrooms. Half of these were traditional teacher-directed classrooms in which instruction involved basal readers with phonics drills and applications. The other half was a student-centred classroom in which instruction by the teacher constituted only 35% of the day's activity. In the latter classrooms, reading was taught primarily by an individualized language-experience method in which students produced their own workbooks of stories and banks of words to be recognized (a whole-language approach). Authorities characterized these two groups as "decoding oriented" and "language oriented". Despite some differences in emphasis regarding how teaching should be conducted, the two groups did not differ in the amount of time spent on reading tasks. The two groups were also matched on

relevant socio-economic variable and they were virtually identical on measures of intelligence and language maturity.

The clear result, however, was that the decoding group scored higher on year-end reading achievement tests, including comprehension tests. Additionally, the language-oriented group did not show higher achievement in oral language measures based on a story telling task (Dahl and Sharer, 2000). The results were consistent with a study which also show quite clearly that instruction that emphasizes the alphabetic principle does not produce word callers who are insensitive to contextual meaning (Wiber, 2002).

In the late 1970s and the 1980s several syntheses of research on effective teaching were written (Brophy and Good, 1984; Rosenshine and Stevens, 1986). Effectiveness was defined in terms of correlations between classroom processes and student outcomes. The strongest correlates of achievement were instructional time engaged in academic tasks, classroom management and certain patterns of teacher-student interactions (Stallings, Robbins, Presbrey and Scott, 1986). For disadvantaged students, the link between explicit instruction and achievement was notable a finding supported in other classroom-observation research (Pappano, 2000; Ogunyemi, 1987).

In response to the assumption that best practice occurred in literature-based classrooms and not in skills-based classrooms, some recent research contrasted these two approaches (Morrow and Gambell, 2000). The literature-based perspective is grounded in reader response theory according to which readers play a central role in the construction of meaning, and in social-constructionist theory. (Cullinan, 1987), according to which literacy is acquired in a book-rich context of purpose communication. Literature-based instruction emphasizes sustained use of authentic literature for independent reading, reading aloud, and collaborative discussions. Skill based programmes, in contrast, are typically defined as traditional programmes that use a

commercially available basal reading programme and follow a sequenced skills ordered according to their difficulty (Rayner, Foorman, Perfetti, Pesetsky, and Seidenberg, 2001).

Systematic phonics instruction falls under this definition of skills-based programmes, whereas literature-based instruction is a more recent term for the whole-language approach. Literature-based instruction was found to benefit literacy acquisition in kindergarten (Castle, Riach and Nicholson, 1994) and at the elementary level (Freppon, 1991; Purcell-Gates, McLintyre and Freppon, 1995; Reutzel and Cooter, 1990). In sum, studies of "best practices" provided orthographic and case studies of a small number of exemplary, teachers, in contrast to the effective-schools research, which examined process-product correlations in a large number of classroom in schools of varying achievement levels.

Recently, the combination of literature-based instruction with traditional basal reading instruction has been found to be more powerful than traditional instruction alone (Dahl Ssharer, Lawson and Grogan, 1999; Morrow, 1992). In fact, balanced reading instruction seems to be replacing literature-basal reading instruction (Fitzgerald and Nobit, 2000; Pressley, 1998), as the pendulum of reading rhetoric swings away from whole-language approaches toward phonics.

While whole-language proponents were advocating the virtues of literature-based instruction and condemning phonics and skills-based instruction in the 1980s and 1990s researchers continued to examine how children's reading development was affected by the interaction of their characteristics with instructional factors. These researchers (Adams, 1990, Ehri, 1998, Foorman, 1994; Harm and Seiderberg, 1999, Perfetti, 1992) addressed the complex mapping of phonology to orthography that are required when learning to read English; they also appreciated that phonics is an ad hoc system of 90 or

so rules for teaching reading that provides only a beginning focus on grapheme-phoneme relations, when infact, there are as many as 500 spelling-sound connections that must be learned (Gough, and Juel, 1991).

Because of the sheer number of these connections, self-teaching is hypothesized as the mechanism by which children continue their reading development beyond basic levels. Self-teaching assumes a foundation of phonological awareness and decoding skill upon which to bootstrap new orthographic information. Several researchers have investigated how this knowledge interacts with instruction in classroom settings. Juel and Roper/Schnieder, (1985) found that if the dominant instructional strategy in the classroom was decoding unknown words letter by letter, children learned the strategy quicker and went on to infer untaught letter-sound relations faster if their beginning reading textbooks contained decodable text. This was particularly true of children with low initial levels of skill (Oyetunde, and Umolu, 1991).

Foorman, Francis, Novy and Liberman (1991) found that students in three first-grade classrooms with more letter-sound instruction improved at a faster rate in reading and spelling than students in three first-grade classrooms with less letter-sound instruction. Initial scores on phonemic segmentation tasks predicted reading and spelling outcomes for all children. Exploratory data analysis revealed that children who were slow to improve in phonemic segmentation were also slow to spell and read phonetically, especially among children receiving less letter-sound instruction (Foorman and Francis, 1994).

In a subsequent study, Foorman, Francis, Fletcher, Schatschneider, and Mehta (1998) examined the reading development of 285 primaries one and two children in 66 classrooms in eight, grade I schools to determine how the nature of letter-sound instruction interacted with entering skill in phonological awareness. These students

scored in the bottom 18% on the districts early literacy assessment. Some teachers participated in one of three kinds of experimental classroom reading programmes and some participated in an unseen control group involving the district's standard curriculum. Instruction in all four groups included a language arts emphasis on writing and read-aloud from good-quality literature.

The three types of experimental programmes were differentiated by the kind of phonics instruction: (a) direct instruction in letter-sound correspondences practiced in decodable text (direct code), (b) less direct instruction in systematic sound-spelling patterns embedded in authentic literature (embedded code), and (c) implicit instruction in the alphabetic code while reading authentic text (implicit code). The 53 teachers for these three groups participated in ongoing generic staff development as well teachers participated in the district whole-language staff development and their students formed a control group for the implicit-code approach.

Children receiving direct-code instruction improved in word reading at a faster rate and had higher word recognition skills than those receiving implicit-code instruction. The improvement was particularly impressive for students who began the year with low phonological awareness. Despite the direct-code group's generally good outcomes however, 35% of them remained below the 30th percentile in reading achievement.

Torgesen (2002) multiplied the percentage of students remaining below the 30 percentile (35% in this case) by the percentage of the distribution of reading scores represented by the students at the beginning of the year (18% in this case) to derive a population-based failure rate. Accordingly, Torgesen computed the population-based failure rate for the study as 6% (35% x 18%). Fletcher and Lyon (1998) pointed out that

a failure rate of 6% represents a substantial reduction in the 15% to 20% of students with reading difficulty in the United States.

The finding that explicit instruction in letter-sounds can prevent reading difficulties for children at risk for reading failure because of poor phonological awareness or lack of home literacy has been demonstrated a number of times (Foorman, Francis, Flettcher, Schatschneider and Mehta. 1998; Juel, 2000; Torgesen, Wagner, Rashotte, Rose, Lindamood, Conway and Garvan, 1999)

The other side of this apparent ability-by-treatment interaction is that primary one children who enter with middle-range literacy skills benefit from classrooms with ample opportunities to read trade books (Juel, 2000). In an investigation of 4,872 preprimary children in 114 classrooms where reading curriculum (informed by ongoing professional development) varied in the degree of teacher choice and in the degree to which phonological awareness was incorporated, less teacher choice and more explicit incorporation of phonological awareness was associated with less variability across teachers in letter knowledge and phonological awareness at the end of preprimary and in reading achievement at the end of primary one (Foorman, Francis, Carlson, Chen, Moats and Fletcher, 2001). More teacher choice and a moderate number of phonological-awareness activities (mostly in the form of letter-sound instruction) were associated with more others-high-scoring-children- at the end of preprimary and primary one.

The effects of instruction can persist beyond the first grade and they can manifest in spelling as well as reading. Bruck, Treiman, Cavavolos, Genesee, and Cassar (1998) compared spelling in primary three children who had whole-language instruction throughout school and their peers who instead had received phonics instruction. The phonics-instructed children were better spellers and their spelling of psuedowords included more conventional, phonological accurate patterns.

In general, it appears that the clarity and organizations of research-based components in the curriculum make a difference to reading outcomes. However, out-of-the-box implementations of basal reading programmes are not likely to be effective. Again, ongoing professional development that provides the rationale for each components of reading (and spelling) instruction and provides classroom coaching to deal with the pacing of instruction, classroom management, and grouping of students in what helps teachers develop successful readers. Expecting teachers to put aside their basal readers and create their own curriculum is not realistic given the lack of resources and of the knowledge-based to do so (Moats, 1994; Oyetunde, and Umolu, 1991).

Since the 1960s, classroom studies of reading methods have consistently shown better results for early phonics instruction compared with instruction emphasizing meaning at the level of words and sentences. This effect is particularly strong for children at risk for reading failure because of lack of home literacy or weak phonological-awareness skills (children who have attention problems, chronic ear infections, articulation problems, or a history of dyslexia in their families). This interaction between children's characteristics and curricular focus is moderated by instructional factors such as teachers' knowledge and competency. Thus, the kind of materials (curriculum) and instructional strategies used interact with a child's stage of reading development in determining the child's success in learning to read (Ogunyemi, 1987).

This fact has important policy implications for improving literacy levels nationwide. Yet in the national arena, reading methods have become highly politicized and the Great Debate has turned into the reading wars. Proponents of literature-based instruction (Coles, 2000; Taylor, Anderson, Au and Raphael, 2000; Taylor, 1998) have attacked research supporting skills-based instruction, despite the fact that this research

investigates process fundamental to learning to read rather than skills-based instruction per se. In return, skills-based researchers have pointed out how these attacks have misrepresented the research and are based primary on philosophical objectives (Foorman, Fletch, Francis and Schatschneider, 2000; Mathes and Torgesen, 2000). Despite the controversy, there is no question that continued scientific study of what constitutes effective reading instruction will benefit children and teachers by improving understanding of how particular children best learn to read (Oyetunde, and Umolu, 1991).

2.9 EMIRICAL RESEARCH ON READING FROM THE LOCAL ENVIRONMENT

Jos metropolis and its environ have witnessed some scholarly investigations in the recent past, such works which will support the evidence of this study. Such studies include those of: Aboki, F.A. (1998), *Developing a reading readiness training programme for parents and teachers of pre-primary and primary one children;* Andzayi, C. A. (2001), *An investigation programme using language experience approach under three language conditions to facilitate reading among primary four non-readers*; Ngochal N. (2001), *Effects of an integrated approach to reading and writing instruction on students' critical thinking*; and Mmuodumogu, C. A. (2001), *The Effects of three methods of instruction on Senior Secondary School Students' vocabulary achievement*. Review of the cited studies will provide reasonable insight to this study on the effects of three methods on the reading achievement of primary school pupils. The cited studies are in each regard and due respect, a Ph.D investigation.

2.9.1 <u>Reading Training Programme</u>

Aboki (1998) investigated the development of a reading readiness-training programme for parents and teachers of pre-primary and primary one children. The study was designed to prepare parents and teachers for effective teaching of reading to their children. This involved designing a reading readiness-training programme for parents and teachers of children in pre-primary one (Umolu, and Oyetunde 1997b).

The programme exposed participants to the nature of the reading process, reading readiness skills and concepts children need to possess to profit from formal reading instruction and how to effectively develop these skills in children. The strategies employed include: Literacy awareness programme (LAP); News on the board (NOB) and Language experience approach (LEA).

This research was partly survey descriptive as well as evaluative in nature. The sample consisted of thirty-five participants; thirty-three teachers and two parents, drawn from four primary schools in Jos metropolis. They were taught for four weeks after which they were given opportunities to demonstrate what they had been taught. Two instruments (instructional questions and observation were used for data collection).

The instructional questions were designed to test the participants' understanding of the nature of the reading process, the reading readiness skills and concept they felt children needed to have, why they thought children had reading problems, and how they would teach reading to their children. The second instrument, classroom observation, involved observing teachers at the school and parents at home as they taught reading (Umolu, and Oyetunde, 1997).

The methods of data analysis included percentages and detailed description of the participants' responses and reading lessons. The findings showed a marked improvement

in the respondents' understanding of the reading process, reading readiness and how initial reading could be effectively taught both at home and in the classroom.

2.9.2 <u>Reading Investigation Programme</u>

Andzayi (2001) conducted an investigation programme using language experience approach under three language conditions to facilitate reading among primary four readers. The study was to compare the effectiveness of remediation using the language experience approach (LEA) in three language conditions (L1), (L2), and a combination of (L1) (L2) used concurrently, in helping primary school children who are non-readers to make significant gains in the acquisition of English, and Hausa sight vocabularies; Hausa and English sentence comprehension, and the attitude of children under each of the treatment conditions.

The research was a combination of a single subject experimental research design (specifically alternating treatment design) and qualitative research. The sample of the study was six Hausa-speaking, non-readers in Jos metropolis who had already received at least three years of primary education. The instruments for data collection included a test of sight recognition of 100 high frequency words in English and the Hausa version. Others were tests of English and Hausa sight word recognition of new "interest" words, sentence comprehension tests and an attitude rating scale.

Six trained teachers who are fluent in both Hausa and English languages were trained by the researcher for two weeks on how to use the language experience approach (LEA). The method of data analysis was descriptive in nature. Each child's performance was plotted on a graph weekly in order to monitor the child's progress and behaviour.

The study revealed that under each of the three treatment conditions, each child learned new English and Hausa high frequency words and, "insight" words. Each child

also learned to comprehend new sentences in Hausa and English during each of the three treatment conditions. Each child's scores on the attitude rating scale toward learning to read under each of the three learning to read treatment conditions also became more positive as child's skills improved. However, the findings showed that a combination of Hausa and English used concurrently was the most effective treatment with each child.

2.9.3   The Effects of Reading Methods

Mmuodumogu (2001) investigated the effects of three methods of instruction on Senior Secondary School students' vocabulary achievement. The study was to compare the effectiveness of instructions involving: instruction in individual word meaning only; instruction in deriving meanings from context only; and instruction involving a combination of the two (integrated method).

The group for instructing in individual word meaning only began its treatment with a general introduction to the instructional programme, which served to create awareness of the need to learn vocabulary. The lessons for the group focused on providing word-meanings and explaining the source of such clue to the meaning. The group was guided to give meaning of words used within contexts, and to explain what gave them clue as their correct meaning. Words, which lend themselves to different meanings in different contexts, were used to highlight how contexts give different meanings to the same word. Instruction in deriving word meanings using only contextual clues and not morphological clues given to the two experimental groups. The third group received instruction in individual word meanings and in deriving the meanings of words from context simultaneously.

A total of nine hundred students located in three schools were randomly selected and involved for the study. These students were randomly assigned to three major

groups, which were sub-grouped into the four in each major one, for the purpose of applying a Solomon-four group design experiment.

The major instruments that were used for data collection were researcher made tests. The tests which consisted of 20 vocabulary items were given to all the pre-test and post-test groups, which also tested students' knowledge of words in isolation and in contexts. The test were in three forms: some tested the students to supply the definitions or synonyms of some words listed in isolation and multiple choice tests which involved choosing the correct meaning of a word from four distrators. Again, students were required to state the meaning of the words as used in the sentences or paragraphs.

The method of data analysis took after the research design and the hypotheses advanced for the study. After the Solomon four-group design was applied to all the groups the pre-test and post-test scores of all the groups were collated according to their groups. The t-test was used to compute and compare results for those that involved two groups only (pre-test and post-test). The analysis of variance (ANOVA) was used to compute the mean scores of those that involved more than two groups. The mean scores of the four sub-groups within the three major groups were then compared to find out their average group performance and thereafter, determined the best performance group.

The research findings indicated increase in the reading gains of the students, pointing to the effectiveness of the investigated reading methods. Results have equally indicated the combination of the methods (interactive method) to be the most effective.

2.9.4 <u>Effects of Reading and Writing Approaches</u>

Ngochal (2001) investigated the effects of an integrated approach to reading and writing instruction on students' critical thinking. This study examined the effects of integrated reading and writing instruction on University of Jos remedial students' critical

thinking. Specifically, the study was designed to find out whether students who were taught reading and writing interactively would perform better in a critical thinking test and therefore perform better in comprehension tasks than students who were taught either reading and writing separately or reading or writing only.

The sample was made up of three hundred and sixty students of the Remedial Sciences Department, University of Jos. This was divided into three major groups of 120 students each, and each of these was further sub-divided into four groups to facilitate the use of Solom-four-group design.

The experimental groups (groups 1 and 2) in major group A were given instruction in reading only. Those in major group B were given instruction in writing only, while those in major group C were taught reading and writing integratively. The instruction took twelve weeks for each group. At the end of the instruction, all the (2 sub-groups) were given a critical thinking comprehension test. The t-test was used to analyze the data. The findings revealed that the group that received integrated instruction in both reading and writing performed significantly better in the critical thinking comprehension test than those who were given instruction in either reading only or writing only, and those who did not receive any instruction at all, the control group. The findings were interpreted in terms of their implications for reading and writing instruction in schools.

Reports on empirical studies have pointed out what has been done in the area of reading and reading development. This cuts across the primary to secondary up to the university level. These studies have respectively touched on important aspects of the reading and reading development. Aboki (1998) worked on developing a reading readiness training programme for parents and teachers of pre-primary and primary one children. This investigation saw the application of reading strategies such as: Literary

awareness programme (LAP); News on the board (NOB) and language experience approach (LEA).

Andzayi (2001) investigated an intervention programme using language experience approach under three language conditions to facilitate reading among primary four non-readers. This study involved determining the effectiveness of remediation using language based reading strategies for primary school non-readers.

Mmoudomogu (2001) studied the effects of three methods of instruction on secondary school students' vocabulary achievement. This study examined three vocabulary acquisition techniques at the secondary school level.

Ngochal (2001), investigated the effects of an integrated approach to reading and writing instruction on students' critical thinking. This study examined the nature and potency levels of reading instructional strategies employed by University students under remedial programme.

The reported studies are both encouraging and motivating. Evidence has been established on what have been done in the area of reading and reading development with regard to the local environment. The research findings will motivate other studies involving similar procedures, considering the programmes, strategies, techniques and the nature of the investigations conducted.

2.10   SUMMARY OF THE REVIEW OF RELATED LITERATURE

In the review, discussion focused on a wide range of topics relevant to how children learn to read. There is evidence from the philosophy of literacy programme concerning both the nature of literacy programmes and instruction, and the nature of early reading development. There is also evidence of research on skilled reading and the implications of such for learning to read and teaching methods.

Included in this review is discussion on arguments based on empirical evidence and information from studies concerning the role of structured methodologies and the development and acquisition of foundational reading skills. There is also evidence from laboratory and classroom studies regarding the most effective method for teaching reading and development of reading skills.

From all these different perspectives, two inescapable conclusions emerge. The first is that mastering the beginning reading skills is essential to becoming proficient in the skill of reading, and the second is that instructional techniques (namely, phonics, whole language and interactive methods) that teach this directly are effective.

This seems to be especially the case for children who are at risk in some way for having difficulty learning to read. It is also the case that the absence of effective reading instruction may increase the number of children at risk of becoming poor readers.

Empirical studies have equally offered relevant information on reading and reading development with reference to the local environment. Reading awareness has been investigated on the part of parents and teachers. This is in addition to investigation of some reading remediation techniques. Also investigated are the effects of some reading instructional methods both in the primary schools, secondary school and university settings.

The studies in the review are not totally different from this work. In the first place, all are dealing with reading and reading development among school learners. All are equally concerned and focus on issues relevant to how children learn to read, more especially on skilled reading and the implications for learning to read and teaching methods. Furthermore, the studies appear similar both in design and environments of study; involving laboratory and classroom studies regarding the most effective methods for teaching reading. Reading development is seen as the outcome of mastering the skills

expected to be acquired following the application of the prescribed instructional techniques.

At the local level, investigations appear similar to this study on the grounds of their nature, scope and intention. All focus on reading and reading development of students; as classroom studies are involved. Again, emphases are on reading skills to be acquired on the part of the students and the application of relevant teaching methods to enable the acquisition of the skills. The purpose and intention therefore look similar in all aspects of the review both globally and at the local level.

On the other hand, gaps exist in the review made which are expected to be covered following the execution of this study. The review focused on a wide range of topics relevant to how children learn to read, including the fact that mastering the beginning reading skills is essential to becoming proficient in the act of reading. This includes the fact that instructional techniques that teach this principle directly are effective. It would appear that major emphasis is on establishing the superiority of one method over the other. But this has not stopped the debate between phonics and whole language methods in particular. There is need to have a pointer (reading skills) at which each method should address.

The empirical studies from the local environment have on their own focused respectively on areas of reading. While some examined the issues of primary reading programmes and remediation (Aboki, 1998; Andzayi, 2001), others (Mmuodumogu, 2001; Ngochal, 2001) examined the effects of teaching strategies at the higher students'– level reading and writing performance. While these cited studies appear adequate and encouraging in themselves, the proposed study stands different in focus, procedure (design) and purpose.

This study targets the teaching methods applied for the development of basic reading skills among primary schools pupils at the beginning reading stage. The three teaching methods being queried to be responsible for such basic reading skills acquisition (namely, phonics, whole language and interactive approaches) are applied under treatment conditions to determine their effects.

Experimental design is adopted whereby intact classrooms of primary four pupils are involved in the study. The expected reading achievement following treatment is measured by pupils' performance scores on "beginning reading achievement assessment instrument". The findings are interpreted in terms of their implications for teaching methods and beginning reading skills acquisition in primary schools.

CHAPTER THREE

METHOD AND PROCEDURES

This chapter is a part of the overall plan which describes the research design, subjects, materials used, procedures, treatment, measurements, and data collection and analysis.

3.1   RESEARCH DESIGN

The conceptual framework within which the study was conducted, informed the research design. This was to help establish the conditions for the comparisons required to test the hypotheses of the study and to enable the researcher through statistical analysis of the data to make a meaningful interpretation of the results of the study (Ary Jacob and Razavieh, 1996).

This research was an experimental study, which adopted pre-experimental-post-experimental test design. Consideration was given to the fact that in a typical school situation, schedules cannot be disrupted nor classes reorganized in order to accommodate the experimenters study. Groups were therefore used, as they were already organized into classes. By this design, it was expected that all subjects were to take the pre-experimental test before the experiment, and the post experimental test at its conclusion.

The design was made up of three experimental groups. For the purpose of this study, Group A was assigned the phonics method; Group B the whole language method, and Group C the interactive method. Intact classes were used as the reactive effects of experimentation were more easily controlled. The subjects were probably less aware of an experiment being conducted than when they would have been drawn from classes and put into experimental sessions. Again, it was considered much more

Table 1:   Pre-Experimental Post-Experimental Test Design

Group	Pre-Experimental	Independent	Post-Experimental
A	Y_1	X	Y_2
B	Y_1	X	Y_2
C	Y_1	X	Y_2

likely (in a school situation) to obtain administrative approval to conduct an experiment if intact classes were used. Furthermore, the more similar the experimental groups were at the beginning of the experiment, and the more this similarity was confirmed by similar group means on the pretest, the more credible the results of the experimental design would become (Ary, Jacob, and Razavieh, 1996).

The following terms and symbols were used

1.   X – represents the independent variable, which is referred to as the experimental variable or the treatment.

2.   Y – represents the measure of the dependent variable. Y_1 represents the dependent variable before the manipulation of the independent variable X. There is usually a pre-experimental test before the treatment. Y_2 represents the dependent variable after the manipulation of the independent variable X. It is usually a post experimental test administered to subjects after the experimental treatment.

In the paradigm for the design, the X_s and Y_s across a given row are applied to the same subjects. The left-to-right dimension indicates the temporal order, and the X_s and Y_s vertical to one another are given simultaneously.

3.2   POPULATION AND SAMPLE OF STUDY

3.2.1   Population

The environment for this study was Jos North Local Government Area of Plateau State, Nigeria. It was as such that the research population included all the primary school children in the Jos North Local Government Area, at the beginning reading stage. This was the population from which the research sample was drawn. The similarity of the

population to the sample, to a great extent would warrant appropriate generalization of the research findings.

This study was to address the beginning reading skills of junior primary school pupils (Class one to four), but a choice of primary four has been made. This has been necessitated by certain linguistic and literacy issues that were pertinent on the part of the children. Although, the children had finished primary three, and were in the first term of primary four, most of them were still found in the process of learning to read. They were found to be still in need of developing important skills including learning to: use English language in conversation, listen and respond to stories read aloud, recognize and name the letters of the alphabet, and listen to the sounds of spoken language. Other lacking skills were to: connect sounds to letters to figure out the "code" of reading and to read often so that recognizing words becomes easy and automatic, as well as learn and use new words, and understand what is read (National Institute for Literacy, 2005). But following their adjustment in the school environment, such class of pupils were just beginning to learn to read.

The primary four pupils were considered "at risk" for reading, as there was need to develop their beginning reading skills, which include: phonological awareness and segmentation activities, fluency, vocabulary and comprehension commensurate with their beginning reading level of performance.

3.2.2 Sample of Study

A total of three large population primary schools were involved in the study. The choice was made so, considering a total of nine primary four classes involved in the experiment. Three of such classes were from each school, with thirty pupils of nine years old per class. Ninety of such pupils participated in one school, making a total of two

hundred and seventy pupils in all as research sample. They were made up of equal number of boys and girls in all cases.

The pupils were drawn from the urban setting of the research environment, and came from different socio-economic status considering the cosmopolitan nature of the environment being a state capital. Again, they constituted a fair representation of the minority ethnic groups including those of the state of study.

Most pupils were found in the category of English language learners and by implication, limited English proficient pupils (Moustafa, 2001). This explains why the beginning reading instructional methods were adopted for the primary four pupils. The methods were to focus on: teaching the sounds of language, the letters of the alphabet, and helping the pupils learn and use new words, including reading to children everyday, practicing the sounds of language, helping the children take spoken words apart and put them together and practicing the alphabet by pointing out letters wherever they are seen and by practicing reading – making meaning from what is read.

3.3   SAMPLING TECHNIQUES

The sampling technique includes procedure for sampling of both the schools and of pupils involved in the study. Consideration was given to the nature of the investigation, the research design and the environment involved.

3.3.1   <u>Sampling of the School</u>

The schools that met the criteria stood the opportunity of being included among the three schools that participated in the study. The purposive sampling was applied for the selection of the schools. Only schools with large population, and not less than twenty years in existence, with not less than one hundred and twenty primary four pupils, stood

the opportunity of being selected. Such schools were to have not less than three qualified reading teachers or three qualified English teachers with a minimum of NCE and basic Teachers' Grade II Certificate. The schools were to be co-educational in nature.

The above criteria combined with random sampling enabled the selection of the following schools:

1.	St Paul's Private School Jos

2.	Township Primary School Jos

3.	St Paul's Township Primary School Jos.

This enabled the adoption of intact classes that comprised the two hundred and seventy pupils for the study.

Table 2 Shows distribution of sample by school. Statistics on school indicate the frequency, percentage, and valid percent, and cumulative percent. The valid frequency for each of the three schools is 90 pupils, representing 33.3 percent in each case, with 270 pupils representing 100 percent.

### 3.3.2	Sampling of Pupils

Owing to the nature of the school situation, schedules were not disrupted nor classes reorganized in order to accommodate the experimental study. It was therefore necessary to use groups as they were already organized into classes and intact groups.

This was as long as they were matched in terms of class level, age, gender and ability performance.

Table 2: Distribution of Sample by School

School	Frequency	Percent	Valid Percent	Cumulative Percent
1	90	33.3	33.3	33.3
2	90	33.3	33.3	66.7
3	90	33.3	33.3	100.0
Total	270	100.0	100	

The groups were assigned the methods namely: phonics, whole language and interactive methods respectively.

Table 3 shows the distribution of sample by groups for the study. The frequency has equal distribution of 90 pupils per Group, with 33.3 percent each. The cumulative percentage indicates 33.3 for one group: 66.6 for two combine, and 100 for the three groups with a total number of 270 pupils involved in the study.

The group equivalence of the subjects was established during the pilot study. This was confirmed by their group pre-experimental test scores found to be similar.

Table 4 shows the similarity in the scores of the three groups. Each of the groups has 30 pupils. The mean ($\overline{X}$) scores for phonics, whole language, and interactive groups are: 6.1222, 6.1222, and 6.0778 while the SD are: phonics .89728; whole language .83232; and interactive .86411.

The groups appear matched following the pre-experimental test scores that are similar. This is attributed to the research design. The more similar the experimental groups are at the beginning of the experiment, the more this similarity is confirmed by similar group means on the pre-experimental test (Ary, Jacob, and Razavieh, 1996).

3.4   INSTRUMENT FOR DATA COLLECTION

This section describes the instrument used for the study. In particular, the procedure for development and validation of the instrument is discussed.

Table 3: Distribution of Sample by Groups

Group	Frequency	Percent	Cumulative Percent
Phonics	90	33.3	33.3
Whole language	90	33.3	33.6
Interactive	90	33.3	100
Total	270	33.3	

Table 4: Pilot Study Pre-Experimental Group Scores Similarity.

Test	Group	N	X̄	SD
Pre-Experimental	Phonics	30	6.1222	.89728
	Whole language	30	6.1222	.83232
	Interactive	30	6.0778	.86411

3.4.1   <u>**Description of the Instrument**</u>

The major instrument for data collection in this study was the "Beginning Reading Achievement Assessment Instrument". This was researcher constructed instrument. The researcher was motivated by the concern of researchers about how children learn to read English (and other languages); and the need to understand the critical skills, abilities and instructional interactions that foster the fluent reading and comprehension of text (Lyon, 2004).

The instrument is a reflection of the skills to be developed by the children in their process of learning to read following the application of the three structured instructional methodologies as each tries to focus on the development of such skills in the children.

The instrument takes into consideration the critical beginning reading skills to be developed which are to be validated following their reading attainment on the application of: phonics, whole language, and interactive methods. The data indicators which are derivable from the instrument centre on the five major beginning reading skills to be developed. Such include: learn about the sounds of spoken language (phonological awareness); learn and use letter-sound relationships (phonics); develop the ability to read quickly and naturally (fluently); learn new words and build their knowledge of what words mean (vocabulary); and build their ability to understand what they read (comprehension) (Armbruster, Lehr, and Osborn, 2003).

3.4.2   <u>**Content of the Instrument**</u>

The Beginning Reading Achievement Assessment Instrument has the following as the measurement traits which address the major data indicators:

a.   The beginning sound consonant letter

b.   Similarity in the beginning sounds of consonant letters

    c.   Similarity in the ending sounds of consonants letters

    d.   Similarity in the middle sounds of consonant letters

    e.   Naming of letters in words

    f.   Adding consonant letters to word part to make words with meaning.

    g.   To say the type of vowel sound in words

    h.   To form a compound word using two related words and vice versa.

    i.   To read sentences for clue to identify missing consonant blends.

    j.   To identify and write correct digraphs.

    k.   To join word parts to form words

    l.   To underline the group of words that tells the meaning in the sentence.

The items on the instrument are twenty five in all. One minute is allotted for each item, which makes an allowance of twenty five minutes for the items to be performed. Again, one mark is assigned to each item, which makes a total of twenty five marks for all the items on the instrument.

The beginning reading achievement assessment instrument was constructed with each item coded as researcher – constructed measure (Kennedy, 1997). The instrument was adopted after the reading skills advocated by Armbruster, Lehr, Lehr and Osborn, (2003). According to them, the children were required among other things to: name the beginning, middle and ending consonant sounds of words; name each letter in words; join consonant letters to word-parts to form words; and use consonant blends and digraphs to complete word parts in sentences. Others include adding word part to initial consonants and blends, fluent and meaningful readings, as well as identifying ideas in sentences. The subjects are made to perform on task individually to indicate their initial knowledge or otherwise before the treatment programme and to prove mastery of the

skills following treatment involving the three structured methodologies. Ability to possess the skills is measured on the pupils' performance on the test instrument.

3.4.3   Development of Instrument

Number of steps were taken to ensure that relevant beginning reading skills items were selected for study. The researcher reviewed some relevant literature on proven ideas from research concerning the beginning reading skills and the teaching methods used in developing them. Such findings focus on: alphabetic, phonemic awareness, phonics, fluency and comprehension. Literature on the teaching of reading skills revealed that for any reading skills instructional programme to be meaningful, the skills items to be taught must be relevant to the pupils' immediate needs (Lyon, and Moats, 1997; Graves, 2000). The researcher selected the items and activities for both the instructional approaches and test construction from Armbruster, Lehr, Lehr and Osborn (2003), A Child Becomes a Reader. This document on proven ideas from research has been produced essentially to enhance literacy promotion and development (National Institute for Literacy, 2004). The aim of the authors is to make evidence-based reading research available to educators, parents, policy makers and others with an interest in helping all people to read well (Armbruster, Lehr, and Osborn, 2003).

It is the general opinion of reading researchers that for reading skills to be learned, retained and recalled, they must be presented in meaningful contexts (Muodumogu, 2001). In keeping with this requirement, attempt has been made by the researcher to present the test items in the natural and meaningful contexts of the skills. Test items were logically and systematically arranged in their difficulty levels, starting from: initial consonant, blends, digraphs and phonological awareness skills. These were followed by fluency and comprehension skills.

On the pre and post experimental performance, care was taken to avoid the inclusion of teaching skills, the skills that were highly content irrelevant. This also helped to ensure that the difficulty levels of the instrument were the same for the pupils or as close to being the same as possible.

The pre and post experimental measures were composed of the same items and of one form. From the researcher's experience as a reading specialist, apart from its agreement with international standards, this instrument measures in specific terms the reading gains of the pupils and in what skill areas these obtain (Armbruster, Lehr, and Osborn, 2003). Again, under a typical test situation, attention of the pupils were on specific skill areas of challenge and there was no time to make comparison between (pre and post experimental tests) given at three months interval at least.

3.4.4   Validity of the Instrument

Quite a number of steps were undertaken for the validation of the assessment. A good number of items were drawn from a pool of beginning reading skills advocated by Armbruster, Lehr, Lehr, and Osborn, (2003). With the help of experts, series of adjustments were effected during the pilot study. At the end twenty five items were selected considering the skills to be tested. Consideration was equally given to the homogeneity of the test items in line with the skills they were supposed to test (National Institute for Literacy, 2004).

The instrument was tested during the pilot study. Data were obtained following the administration of the instrument for a group of thirty primary four pupils. The validation process was to assess how well the structure generalized to a larger population. The cross-validation was adopted which divided the sample into a number of sub-samples, or folds. Tree models were then generated, excluding the data from each

sub-sample in turn. The first tree was based on all of the cases except those in the first sample fold, the second tree was based on all the cases except those in the second sample fold, and so on. For each tree, misclassification risk was estimated by applying the tree to the sub-sample excluded in generating it.

A maximum of twenty five sample folds were specified, and the higher the value, the fewer the number of cases excluded for each tree model. The cross-validation produced a single, final tree model. The cross-validated risk estimate for the final tree was calculated as the average of the risks for all of the trees. After the analysis of data obtained with the assessment instrument, the cross validation estimate is .740. Following the fact that the beginning reading achievement assessment instrument, is a researcher initiative, and for the fact that there was no other official assessment instrument available for this study, the calculated reliability coefficient of .740 is acceptable for the instrument of this study (Ary, Jacob, and Razavieh, 1996).

The criterion-related evidence of the instrument was determined following the reliability coefficient score. The instrument was found to measure what it was supposed to measure, in this case, beginning reading attainment following performances on the test that measured the expected skills to acquire as indicators to reading achievement (Kennedy, 1997). The emphasis in this type of evidence is on the criterion and the measurement procedures used to obtain criterion scores (Ary, Jacob, and razavieh, 1996).

The construct related evidence focused on the test scores as a measure of a psychological trait or construct, in this case, reading development and acquisition, as determined by the reading skills. The items of the assessment instrument were inspected to determine if they seemed appropriate for assessing the elements in the construct. Empirical data were gathered and analyzed as in cross-validation (Reliability coefficient). Internally, relationships within the test were as predicted by the construct,

and externally, relationships between scores on the test and other observations were consistent with the construct (Lyon, and Moats, 1997).

On the whole, the extent to which the instrument appropriately tested the functions it was supposed to test and the consistency at which scores were obtained (using the instrument) during pilot study provided further support for the validity among others. The pre-experimental and post-experimental test strategies also supported the validity of the research instrument. The validation of the instrument like its construction undertook a systematic, logical and scientific approach.

3.5   METHODS OF DATA COLLECTION

The researcher obtained official permission from the head teachers of the three primary schools used for the study. Next was the training of teachers (three teachers per school). Pre-experimental test was equally administered for all the subjects participating in the study covering all the experimental groups. Post-experimental test was also administered for all the groups after the treatment schedule involving the application of the three methods.

3.5.2   <u>Procedure for Teacher Training</u>

Nine teachers were trained by the researcher at three hours a day and for a period of two weeks. This was on how to effectively carry out the instructional programme. As there were no reading teachers in the schools, only professional teachers with basic teaching qualification were involved. Preference was given to the teachers with teachers' Grade II Certificate and N.C.E (English) qualification, with at least three years post qualifications experience. The trained nine teachers (three from each school) were randomly assigned to the experimental groups in the three schools.

The training programme focused on the basic reading skills at the beginning reading stage, the types of the reading skills, their instructional implications and the methods and principles of beginning reading strategies. The training instruction demonstrated the three instructional conditions, emphasized the teachers' classroom activities and pupils' involvement. There were also demonstrations by the trained teachers followed by further discussions for adequate consolidation of the instructional practices.

3.5.3 **Treatment Procedure**

The treatment schedule covered a period of fourteen weeks. The treatment took place once a week for thirty five minutes, during which one reading skill was taught. The reading skill taught the previous week was reviewed within the week before the skill for the week was introduced. Only reading skills were taught as treatment following the fact that most of the children had difficulty developing phoneme awareness. However, at this initial stage of reading development, learning phoneme awareness and phonics skills and practicing these skills with texts was critical. Supplementary reading materials were also used considering the special reading needs of the children.

The treatment for the groups included instructions by the trained teachers. The instructions were carried out under the following simultaneous treatment conditions: phonics approach for group A; whole language approach for group B and interactive (combination of phonics and whole language) approach for group C.

The group in the phonics approach (group A) received treatment using twelve lessons of approximately thirty five minutes each on instruction in phonics approach only. Group B, in whole language approach also received treatment in twelve lessons. There were equally twelve lessons for the interactive C involving a combination of

phonics and whole language instructional methods. All the instructions were given by the trained teachers under the supervision of the researcher.

Group A began the treatment with a general introduction to the instruction programme. This served to create awareness of the need to learn phonics. Instruction in this group focused among other activities on: Alphabetic code, code emphasis, phonemic, phonetic and phonological decoding, direct explicit instruction; grapheme-phoneme correspondences, graphophonic, letter training, phoneme analysis and blending.

Group B equally began the treatment with a general introduction to the instruction programme. This served as awareness to the instructional programme involving whole language method. Instruction in this group focused among others on: code emphasis, decodable text, letter tracing, linguistic strategies, embedded phonics, recipe for reading, word study, word sorting, oral reading, reading of story book, word attack, word recognition and identification, word reading and non-word reading.

Group C began the treatment with a general introduction to the instructional programme, as awareness to the programme involving interactive method. Instruction in this group focused on the combination of phonics and whole language skills as the group learned beginning reading skills drawing from relevant learning experiences offered by the two approaches.

The groups received one period of instruction per week on reading skills involving their respective methods. This lasted for four weeks after which a total of four items were taught in each group. A general review of all the taught items followed by the fifth week.

Instruction continued again for another four weeks covering another four items. The instruction thereafter continued for another four weeks. At the end, a total of twelve

items was taught in each of the three groups involving their instructional methods respectively. The treatment programme involving the three instructional methods lasted for fourteen weeks. The same approach in terms of lesson, review and length of time were equally applied to each of the three groups simultaneously.

3.5.4   Method of Data Collection within Groups

All subjects took the pre-experimental test before the experiment began and the post-experimental test at its conclusion. In this regard, methods of data collection within groups followed the format of the design of study. Data were therefore collected based on the segments of tests (pre and post experimental tests) administered. The tests were individually administered to the subjects by the researcher assisted by the trained teachers. Adequate consideration was given to the hypotheses advanced for this study as data were arranged in respect of pre and post experimental test scores for the three experimental groups.

The experimental groups were similar at the beginning of the experiment. This was confirmed by their similar group means on the pre-experimental test scores.
Table 5 shows the main study pre-experimental group scores. The subjects were 90 for each of the groups. The mean difference scores indicate: phonics 6.1111; whole language 6.1111; and interactive 6.0667. Their standard deviation scores indicate: phonics 0.89247; whole language 0.8406; and interactive 0.85853.

The above scores confirmed the mean scores of the three groups before treatment involving the three structured methodologies.

3.5.5   Administration of the Pre-Experimental Test

Prior to commencement of treatment, pre-experimental test was administered to all the groups. This was to ensure the matching of all the subjects in terms of characteristics and performance level. The beginning reading achievement assessment instrument was used for this purpose. By the time the test was given, the pupils had equal opportunity of reading to the test items, thereby forestalling bias performance. One minute was allocated for each test item, and a total of twenty five minutes allocated for the administration of the test.

It is the consensus of experts that pre-experimental test scores when compared with post-experimental test scores are an excellent source of information about the efficiency and the effectiveness of instructional methods (Zenhausern, and Rosenberg, 1994). Kennedy (1997) observed that the use of post-experimental test scores alone does not ascertain the effectiveness of the instructional methods. The post-pre-experimental test scores therefore, were collated and compared with the experimental test scores to accept or reject the hypotheses.

Table 5: Main Study Pre-Experimental Group Score Similarity

Test	Group	N	Mean	Std Deviation
Pre-Experimental	Phonics	90	6.11110	.89247
	Whole language	90	6.11110	.8406
	Interactive	90	6.06670	.85853

3.5.6 **Method of Data Analysis**

Four hypotheses were stated for this study. For the purpose of testing the hypotheses data were collected and arranged in line with the pre-experimental and post-experimental test scores for the three major groups that used the three structured methodologies. Different statistical tools were applied for this purpose. The following illustrate the hypotheses and associated statistical tools:

Ho_1: There will be no significant difference in the beginning reading achievement skills of Nigerian primary school children on the basis of the use of phonics reading method. The t-test for correlated samples was used for data analysis.

Ho_2: There will be no significant difference in the beginning reading achievement skills of Nigerian primary school children on the basis of the use of whole language reading method. The statistical tool was the same as in hypothesis two.

Ho_3: There will be no significant difference in the beginning reading achievement skills of Nigerian primary school children on the basis of the use of interactive reading method. The tool for analysis was the same as in hypothesis two.

Ho_4: There will be no significant difference in the beginning reading achievement of the children on the basis of the comparison of the three structured methodologies (phonics, whole language, and interactive). One-way Analysis of variance (ANOVA), with Post Hoc Tests were used for data analyses, to determine the best method and their range of effectiveness.

3.6 **PILOT STUDY REPORT**

3.6.1 **Introduction**

The pilot study was carried out between January and March 2005 at Fatima Private School Jos, Plateau State. The purpose of the pilot study was, first of all, to assist

the researcher decide whether the study was feasible and whether it was worthwhile to continue. It provided an opportunity to assess the appropriateness and practicality of the data collection instrument, just as it permitted a preliminary testing of the hypotheses, which was to proved some indication of their tenability and to suggest whether refinement was needed. The pilot study investigated the adequacy of the research procedures and the measures that were selected for the variables, including unanticipated problems that were to appear and should be solved at this stage of the study.

3.6.2 <u>Methodology</u>

The research design, including population and sample of study as well as instrumentation were all in line with the indications in chapter three. From the entire primary four class population, one hundred and twenty pupils with a mean age of nine years were involved in the pilot study, while three teachers were trained for the purpose of the experimental design.

3.6.3 <u>Summary of the Major Results of the Pilot Study</u>

The pilot study saw the validation of the research instrument. Necessary adjustments were effected after a careful review of the measurement traits. The items on the instrument were adjusted to twenty five covering the range of the beginning reading skills to be assessed.

The reliability coefficient of the instrument was determined following the data obtained on its administration. The cross-validation method was used for data analysis. A score of .740 was obtained which confirmed the acceptability of the instrument for the study.

The criterion-related evidence of the instrument was determined on the basis of the reliability coefficient score, as the instrument was found to measure appropriately the beginning reading skills.

The construct related evidence was established, in this case with regard to relationship between the test scores and reading development and acquisition, as determined by the reading skills being measured.

The equivalence of the three groups was determined following the similarity in their mean difference obtained from the pre-experimental test score. The pilot study confirmed the appropriate matching of the groups for the main study.

The training of the teachers was found appropriate and commensurate to the research design and the application of the three structured methodologies. Adequate insight was gained on the beginning reading skills enhanced by the instructional approaches. The period of time for the training of teachers and application of the research design was found adequate.

The pilot study tested the beginning reading proficiency of the pupils irrespective of the methods of instruction. The instrument was used to obtain reasonable data from test scores, covering pre-experimental and post-experimental strategies. This made possible the mean difference comparison between pre and post-experimental test scores. It was as this point that the instrument was confirmed useful in determining the efficiency of beginning reading skills, as enhanced on the basis of the structured methodologies.

3.6.4   Positive Changes from Pilot Study

Obvious positive changes obtained from the experience of the pilot study. In the first place, the pilot study helped to confirm the feasibility and worthwhileness of the

main study. It provided an acceptable assessment on the appropriateness and practicability of the data collection instrument. Appropriate modification was made on the number and sequence of skill areas, including their homogeneity, which proved adequate and acceptable both in the pilot and main studies respectively.

The pilot study permitted a preliminary testing of the hypotheses. This made possible the necessary modifications which reduced the hypotheses from nine to four as it was no longer necessary to include the control group in the research design. The later four hypotheses proved adequate and appropriate both in the pilot and main studies respectively.

The pilot study demonstrated the adequacy of the research procedures and variables. The equivalence of the three groups was determined following the similarity in their mean difference obtained from the pre-experimental test scores, including the matching of the groups for the main study. Again, the training of the teachers was found appropriate and commensurate to the research design and the application of the three structured methodologies.

The pilot study provided reasonable information, and the situation to obtain the entry point of the children on the basis of the pre-experimental test scores, and post-experimental test scores that suggested the possibility of applying the three structured methodologies for the purpose of developing beginning reading skills. Unanticipated problems such as truancy on the part of some children and teachers' negative attitude towards some children with behaviour problems as a result of their reading problems, were addressed, thereby saving time and effort required for the execution of both the pilot and main studies appropriately.

3.6.5 <u>Conclusion</u>

The pilot study remained critical to the execution of the main study. It provided grounds for appropriate decision on the feasibility and worthwhileness of the study, the appropriateness and practicability of the data collection instrument, permitted a preliminary testing and modification of the hypotheses, and demonstrated the adequacy of the research procedures and the measures that have been selected for the variables. An appropriate intervention strategy was established based on the working relationships among the beginning reading skills, the three structured methodologies and the research assessment instrument. On the whole, the pilot study provided insight that gave indications for the main study.

CHAPTER FOUR
RESULTS

This chapter is about the organizing, and analysis of data involving necessary calculations including interpretation of results and discussion of findings.

4.1   TEST OF HYPOTHESES

Computer was used in the processing of data, and adequate consideration given to the research proposal in order to check the original plans for presenting data and performing the statistical analysis. A critical evaluation was made of the computer's product. This was done through appropriate organization of data in line with the pre and post experimental test scores. Next was the appropriate selection of programme of analysis, which was in line with the kind of statistical procedure most appropriate for the given set of data.

Following the adoption of computer analysis, the model was estimated using the method of statistical package for social scientist (SPSS) software version 11.0. Based on the layout of the research plan, hoping that the consequences of the hypotheses were expressed in reliable observations, it was expected that the interpretation and value of the observations be obvious (Ary, Jacob, and Razawieh, 1996).

4.2.1   <u>Hypothesis One</u>

There will be no significant difference in the beginning reading achievement skills of Nigerian primary school children on the basis of the use of phonics reading method.

Table 6: Summary of t-test Results on Pre-Post Experimental Test Comparison in Phonics Method Group A

Test	N	X	SD	t-cal	df	P-val
Pre-Experimental	90	6.111	0.89247			
				-90.71	89	0
Post - Experimental	90	15.38	0.80137			

P < .05

Table 6, shows the results of pre and post experimental test scores comparison for correlated samples in phonics method group A. The results indicate the mean of 6.111 for pre-experimental test scores and 15.38 for post-experimental test scores. The P − value of 0 is less than .05 level of significance, the result of which has less than a specified probability of being function of chance. The hypothesis of no significant difference in the beginning reading achievement skills of the children on the basis of the use of phonics reading method is therefore rejected. With these data, it appears the treatment involving phonics method was effective in helping the children to learn the beginning reading skills as determined from test scores.

4.2.2 **Hypothesis Two**

There will be no significance difference in the beginning reading achievement skills of Nigerian primary school children on the basis of the use of whole language reading method.

Table 7: shows the results of pre and post experimental test scores comparison for correlated samples in whole language method group B. The results show the mean of 6.111 for pre-experimental, and 14.17 for post-experimental test scores. The P-value of 0 is less than .05 level of significance. This result has less than a specified probability of being a function of chance. The hypothesis of no significant difference in the beginning reading achievement skills of the children on the basis of the use of whole language method is therefore rejected. From the results it appears the treatment involving whole language method was effective in helping the children to develop the beginning reading skills as derived from test scores.

Table 7: Summary of t-test Results on Pre-Post Experimental Test Comparison in Whole Language Method Group B.

Test	N	X	SD	t-cal	df	P-val
Pre-Experimental	90	6.111	0.8406			
				-94.08	89	0
Post -Experimental	90	14.17	0.8644			
				P < .05		

4.2.3   Hypothesis Three

There will be no significant difference in the beginning reading achievement skills of Nigerian primary school children on the basis of the use of interactive reading method.

Table 8: shows the results of pre and post experimental test scores comparison for correlated samples in interactive method group C. The results indicate the mean of 6.0667 for pre-experimental, and 14.467 for post-experimental test scores. The P-value of 0. is less than .05 level of significance which (result) has less than a specified probability of being a function of chance. The hypothesis of no significant difference in the beginning reading achievement skills of the children on the basis of the use of interactive reading method is rejected. With the available data, it appears the treatment involving interactive method was effective in helping the children to acquire the beginning reading skills as shown from test scores.

4.2.4   Hypothesis Four

There will be no significant difference in the beginning reading achievement of the children on the basis of the comparison of the three structured methodologies (phonics, whole language and interactive).

Table 8: Summary of t-test Results on Pre-Post Experimental Test Comparison in Interactive Method Group C.

Test	N	X	SD	t-cal	df	P-val
Pre-						
-Experimental	90	6.0667	0.85853			
				-111	89	0
Post -						
-Experimental	90	14.467	0.85064			

P < .05

Table 9: Summary of Analysis of Variance on Post Experimental Test Comparison for the Three Methods

Test	Group	N	X	SD	F	P-val
Post-Experimental	Phonics	90	15.3778	0.80137		
					.50.834	0
	Whole language	90	14.1667	0.8644		
	Interactive	90	14.4667	0.85064		

P. <.05

Table 9, shows the results of post experimental test scores comparison for the three methods (phonics, whole language and interactive). The results show the mean of: phonics 15.3775; whole language 14.1667; and interactive 14.4667. The P-value of 0.00 is less than .05 level of significance the result of which indicates less than a specified probability of being a function of chance. The hypothesis of no significant difference in the beginning reading achievement of the children on the basis of the comparison of the three structured methodologies is rejected. Judging from the results, it appears the approaches were effective but varied in their levels of effectiveness in helping the children to learn the beginning reading skills.

4.2.5 Post Hoc Tests

The variety in the level of effectiveness of the three methods required further analysis to determine their range and which of them remained most effective. This further analysis was made possible by the fact that the three methods have been found to be effective. This therefore warranted the application of post hoc tests.

Table 10, shows the results of post hoc tests involving multiple comparisons among the groups for study (phonics, whole language and interactive methods). Each of the groups (1) was compared with (J) the rest of the two groups, one at a time. The mean difference (I − J), std error and significant levels were determined for each comparison. Comparisons of mean difference between (I) method and the rest (J) methods indicate: phonics the most effective followed by interactive before whole language. The std error of 0.12511 across the cases of comparison suggests that the results are more attributed to treatment effect than by chance. Again the P-values of 0.017 and 0. which are less than .05 significant level; suggest further the respective difference in the treatment effects among the three structured methodologies.

Post Hoc Tests

Table 10: Summary of Post Hoc Tests - Post Experimental Multiple Comparisons

Dependent Variable	(I) Methods	(J) Methods	Mean Difference (I –J)	Std	P-val
Post-Experimental	Phonics	Whole language	1.21111(*)	0.12511	0
		Interactive	.91111(*)	0.12511	0
Whole Language		Phonics	-1.21111(*)	0.12511	0
		Interactive	-.30000(*)	0.12511	017
Interactive		Phonics	-91111(*)	0.125110.	0
		Whole language	.30000 (*)	0.125110.	017

P. < .05

4.2.6   **Threshold of the Instrument**

There is need to obtain the utility value of the research instrument following its application in this study and for future diagnosis of children with reading difficulties. This involves determining a level at which the success of a child is measured following his performance on test.

A good way to show criterion – related evidence of test's validity is to use an expetancy table (Ary, Jacob, and Razavieh, 1996), and criterion – related evidence is essential for tests that are used for selection and classification purposes (p.267). The fundamental idea here is to predict the success of children following their performance scores on the test.

In the case of the research instrument (Beginning Reading Achievement Assessment Instrument), the pre and post experimental tests scores for one group of 90 children were obtained. The scores were correlated to determine the range of the scores of students. The results on table 11 show that 26 of the children scored 4 or lower; 59 scored between 5 and 7, and 5 scored between 8 and 10; while none scored up to 11 and above in the pre-experimental test.

On the other hand the results for post experimental test show that 84 of the children scored between 14 and 16; and 6 scored 17 or higher while none scored 13 and below. Following the determination of test scores and the extent to which the children identify with expectancy table (range of scores following performance), the threshold of the research instrument is suggested to be established.

Table 11: Expectancy table on Test Scores for 90 Children

Score Range	Number of children	
	Pre-Experimental	Post-Experimental
17 or higher	0	6
14 – 16	0	84
8 – 10	5	0
5 - 7	59	0
4 or lower	26	0

4.3   DISCUSSION

This study was conducted to investigate the validation of beginning reading skills for Nigerian primary school pupils using three structured methodologies. Data were analyzed to test each of the four stated hypotheses and results established.

Evidence from this study has suggested the validation of the beginning reading skills following the reading gains observed on the comparison between pre and post experimental text performance scores of the groups. Following the results of the analyses, it appears the treatment involving the three structured methodologies were effective in helping the children to learn the beginning reading skills.

Hypothesis one tested the significant difference in the beginning reading achievement skills of the children on the basis of the use of phonics method. The results on this hypothesis indicate the mean of 6.111 for pre-experimental and 15.38 for post experimental test scores. The P-value of 0. was significant to reject the hypothesis at .05 level. Again the S.D. of 0.8406 for pre-experimental, and 0.8644 for post experimental with df of 89 suggest that the observed reading gains for the group was more of the treatment effect using the method than by chance.

Hypothesis two tested the significant difference in the beginning reading achievement skills of the children on the basis of the application of whole language method. The results in this respect indicate the mean of 6.111 for pre-experimental and 14.17 for post-experimental test scores. The P-value of 0. was significant to reject the hypothesis of no significant difference at .05 level. The SD of 0.8406 for pre experimental and 0.86644 for post experimental, with df of 89 suggest that the development of the reading skills was more of the effect of treatment using the whole language method than by chance.

Hypothesis three tested the significant difference in the beginning reading achievement skills of the children on the basis of the use of interactive method. The results here show the mean of 6.0667 for pre-experimental and 14.467 for the post experimental test scores. The P-value of 0. was found significant to reject the hypothesis of no significant difference at 0.05 level. Again, the S.D. of 0.85853 for the pre-experimental and 0.85064 for the post-experimental, with df of 89, all suggest that the acquisition of the reading skills was not by chance as this could be attributed to the treatment effect based on the use of interactive method.

Hypothesis four tested the significant difference in the beginning reading achievement skills of the children on the basis of comparison of the three structured methods. The results of this hypothesis show the mean of 15.3778 for phonics; 14.1667 for whole language; and 14.4667 for interactive method. The SD of 0.80137; 0.8644, and 0.85064 respectively for the three groups and F-ratio of 50.834 with P-value of 0. all point to the fact that the results obtained were not by chance as the treatment effects on the part of the methods could have accounted for the reading gains of the children as determined from the results of assessment.

The main focus of this study was to obtain the validation of the beginning reading skills of the primary school children on the basis of the application of three structured approaches (phonics, whole language, and interactive). Beginning reading skills form the basis for instruction on learning to read (Smith, Simmons, & Kameenui, 2005). Research of more than two decades has affirmed the importance of such to reading acquisition. Reviews of literature (Hurford, Davvow, Edwards, Howerton, Mote, Schauf, & Coffey, 1993; Mann, 1993) have indicated that the presence of beginning reading skills is a hallmark of good readers while its absence is a consistent characteristic of poor readers.

In considering the relationship between the skills and reading acquisition (Smith, Simmons, and Kameenui, 2005:1) identified five areas of converging evidence in the research: The beginning reading skills explain much of the difference between good and poor readers; the skills constitute unitary construct with multiple dimensions; are causally and reciprocally related to reading acquisition; and necessary for early reading acquisition. Next includes that they are teachable, and are promoted by attending to instructional design variables (e.g., conspicuous strategies to facilitate reading, scaffolding across a continuum of difficulty for dimensions, and across features of each dimension, strategic integration of the skills and other necessary components, such as letter sound correspondence instruction).

In this study, investigation was made of the beginning reading skills of converging evidence for students with diverse reading needs. An attempt was made to connect research and practice by responding to major demands: Research-based instructional priorities in beginning reading skills, and for the structured approaches (phonics, whole language and interactive).

The reading gains of the children, determined from the groups' performance on test, indicating the children's ability to learn the skills, have suggested validation of the beginning reading skills. Again for the fact that such skills have been investigated on the basis of the instructional methodologies involving them and confirmed through assessment strategies, to these extents the validation of the reading skills could be regarded as credible in this study.

The research synthesis (Smith, Simons, and Kameenui, 1995) revealed moderate support for the notion that reading skills for example, phonological awareness, is a general ability which has multiple dimensions of varying complexity. A common definition of phonological awareness is sensitivity to the sound structure of language and

a conscious ability to detect, combine, and manipulate different sizes of sound units (Dye, 2000). Although research has not definitely concluded which dimensions are obligatory for beginning reading, the converging evidence suggests the preeminent lasting effects of a delay in phonological awareness. Thus, the research convergence points to a priority of early identification of students with low phonological awareness (Smith, Simmons, and Kameenui, 2005). Many children have difficulty developing phoneme awareness. As earlier observed, individual sounds (phonemes) within the words are not consciously heard by the listener. Again, no one ever receives any natural practice understanding that words are composed of smaller, abstract sound units (Learning Disabilities Association of America, 2004). It therefore, suggests that it is only through research such as this that such reading skills could be validated. (Bender, 2002; Andzayi, 2001).

Programmatic research over the past 35 years has not supported the view that reading development reflects a natural process that children learn to read as they learn to speak, through natural exposure to a literature environment. Researchers have established that like certain aspects of learning to speak, beginning readers must appreciate consciously what the symbols stand for in the writing system they learn (Liberman, 1992).

Learning to read involves the development of important skills such as recognize and name the letters of the alphabet, listen to the sound of spoken language, connect sounds to letters to figure out the "code" of reading, read often so that recognizing words becomes easy and automatic, learn and use new words and understand what is read (National Reading panel, 2005). Following the findings of this study on the acquisition of reading skills in the process of learning to read, and obtained from test

measurement, the beginning reading skills necessary for the reading development and skills acquisition at the primary school level might have been established.

Kannedy (1997) released research results that shed light on the skills and understandings about literacy which children must acquire in order to learn to read. The studies report that more than one in six young children will encounter a problem learning to read during their crucial first three years in school. The National Assessment of Education Progress (NAEP, 2005) reported results that indicate every school has a number of children who are failing in the task of learning to read. This study was able to discover that most of our primary four children were yet to begin learning to read. The results of the researchers' analysis reveal that the reading skills are possible to be acquired and teachers need to build a solid foundation for their students (especially those with reading difficulties) to succeed in learning to read. Liberman (1992) points out the basic and prerequisite skills that build this solid reading foundation as they include: appreciation of the written word, develop awareness of printed language, learn the alphabet, understand the relationship between letters and words, and understand that language is made of words, syllables, and phonemes; including learn letter sounds; sound out new words, identify words in print accurately and easily; know spelling patterns; and learn to read reflectively (p.27).

The validation of the skills can further be derived from an understanding of what underlies poor reading for most children. The findings of this study have shown that for most children with reading difficulties, poor reading comprehension is a secondary problem, caused by inaccurate or inefficient word reading (Lyon, 1995; Rayner, Foorman, Perfetti, Pesetsky, and Seidenberg, 2001; Snow, Burns, and Griffin, 1998, and the Report of the National Reading Panel, 2000). Most of these children, often described with "specific reading difficulties", comprehend spoken material about as well as

average readers, but they struggle with inaccurate or slow word reading (Wise and Snyder, 2002; Oyetunde, and Umolu, 1991), and weak phonological processes underlie their word-reading problems (Lyon, 1995, Rayner, Foorman, Perfetti, Pesetsky, and Seidenberg, 2001) Most children with reading disabilities also have weak short-term memory, weak phoneme awareness (the metacognitive ability to identify and manipulate sounds in spoken words), and weak phonological decoding skills (sounding out print to speech) (Lyon, 1995). These last two difficulties lead directly to problems in word reading and spelling, which lead to the secondary difficulties in reading comprehension (Perfetti, Marron, and Foltz, 1996; Felton and Brown, 1990). A very encouraging research finding is that these weaknesses can indeed be remedied with intensive instruction that is designed to strengthen the underlying phonological processes and to integrate them extensive practice reading accurately in context (Wise, Ring, and Olson, 2000; Wise, 2002).

Some children have problems comprehending main ideas and making inferences, even in spoken materials. Such children appear to have problems with higher level language skills such as recognizing syntactical relationships, pronoun referents, and making inferences (Nation and Snowling, 1998). This study addressed their needs within the structured methodologies, as it directly addressed the difficulties underlying weak oral comprehension. Intensive structured, and sustained instruction in phoneme awareness and phonics, carried into extensive accurate practice in engaged reading for meaning helps most children with reading difficulties to improve their foundational skills and learn to read (National Reading Panel, 2000; Rayner, Foorman, Perfetti, Pesetsky, and Seidenberg, 2001). Research consensus suggests the necessary components of good instruction to include phonological awareness, phonics (alphabet, decoding), fluency

(sight words, automaticity and prosody), vocabulary, and comprehension (NRP, 2000; Rayner, Perfetti, Pesetsky, and Seidenberg, 2001).

Phonological awareness and alphabet knowledge are the strongest predictors of later reading progress, and development of such as also reciprocal with learning to read and spell (Perfetti, Beck, and Hughes, 1987). With the findings of this study it appears children need a basic ability to identify and manipulate sounds in syllables in order to grasp and to read (Wise, Ring and Olson, 2000). This "alphabetic principle" is the insight that English spelling represents the sounds, or phonemes of words. On the other hand, in the process of learning to read, as the findings of this study indicate, children do also improve in phonological awareness. Most studies show larger benefits from phonological awareness when it is linked with letters and sounds than when it is done in speech alone (Blachman, Tangel, Ball, Black, and McGraw, 1999; Brady, Fowler, Stone and Windbury, 1994; Bryne and Fielding – Barnsley, 1991), and instruction in phoneme awareness leads not only to gains in this skill itself, but also to subsequent gains in reading and spelling (Rayner, Foorman, Perfetti, Pesetsky, and Seidenberg, 2001). Studies of reading remediation among older children with reading problems have shown that these children also improve in reading after explicit work in phonological awareness and decoding (Hatcher, Hulme and Ellis, 1994; Torgesen, Wagner, and Rashotte, 1997; Wise, Ringe, and Olson, 2000), and computer assisted instruction has helped children improve phonological awareness and decoding in both early reading and reading remediation (Torgesen, 1997; Wise, Ring and Olson, 2000).

Learning to decode words accurately is another important foundational skills for reading. Children with reading difficulties usually have specific difficulties with reading words accurately, and this difficulty has been shown often to have a brain-based, inherited component related to phonological awareness (Frith, 1997; Gayan and Olson,

2001; Olson, Fersberg, Gaya and De Fries, 1999; Shaywitz, 2003) Happily, much research has shown that systematic and structured work on phonological awareness and the code can improve this skill, even in children with severe reading disabilities (Wise, Ring and Olson, 2000). Misread words lead directly to mistakes in comprehension. Children need to learn to decode regular words accurately, and older readers still need good decoding for deciphering novel words and long words, children who have learned to decode words accurately, but slowly, can still have secondary problems in comprehension, because so few resources remain available for comprehension (Perfetti, Marron, and Foltz, 1996).

While most struggling readers have had reading problems from the outset (Coles, 2006), research suggests that some struggling readers emerge later in primary four, in at least three ways (Lyon, 1999; Scarborough, 1998a; 2001): some of these Struggling readers have only moderately weak phonological decoding skills that have escaped attention so far during their schooling, but who now show problems as the reading system gets more complex and more resources are needed for comprehension; some have slow word reading skills either related to lack of practice (Cunningham and Stanovich, 1998; McBridge − Chang, Manis, Serdenberg, Custodio, and Doi, 1993), or related to slower speech or access of words (Scholastic, 2001a).

Many remediation studies have succeeded at helping children to learn to decode accurately by improving their phonological awareness and then teaching them the regular patterns of English in a systematic, structured and intensive way. In a pilot study (Wise, Ring, and Olson, 1999), students were extremely motivated by speed trials with words after they had learned to read them accurately. Breznitz (1997a) supports that fluency and automatically can be improved, and that this also leads to improvement in comprehension. Therefore, after students learn structural methodologies, they also

practiced the patterns until they become accurate, fast, and easy. It would appear few cognitive resources were in demand while reading. (Wise, Cole, Van Vuuren, Schwartz, Snyder, Ngampatipatpong, Tuantranont, and Pellom, 2005).

Apart from learning to communicate sounds clearly in writing, learning to sound out regular words in spelling is extremely important for its benefits to phonological awareness, to decoding, and to reading (Ball and Blackman, 1991). Earliest readers often learn to decode print, or to sound words out, by first learning to blend sounds together and spell them. Learning to represent the spellings of words reasonably, with appropriate vowel sounds in order, improves phonological awareness and decoding, which both underlie the ability to understand and use the alphabetic system in reading (Wise, Ring and Olson, 2000). Hecht and Close (2002) recently found the same pattern of results (of gains in reading, phonological awareness, and spelling from learning to spell phonetically, but not from just learning letter-sound associations), in a training study using a powerful "talking" computer programme (Wolf, and Katzir – Cohen, 2001).

Reading sight words (orthographic coding) for accuracy and for fluency (automatically) does still involve some phonological coding (Van Orden, 1987). However, it depends mainly on orthographic coding, the coding or memory of specific spelling patterns. Just as children differ in their proficiency with hearing sounds in words and in decoding print in sound, children also differ greatly in how long it takes them to build up strong, automatic orthographic images for words (Beck, and Mckwown, 2001) Reitsma (1983); Van Daal and Reitsma, (1993) found that primary two children who read normally needed far fewer correct practices with a word to maintain the ability to read it than did children with reading disabilities. While orthographic skills has a genetic component, it is highly influenced by reading experience (Gayan and Olson, 2001; Stanovich and Cunningham, 1992). Children improve in time limited "sight" reading

from accurate reading in text (Wise, Ring, and Olson, 2000), and they improve with training in sight reading and spelling activities (Ehri, 1998), and spelling words improves children's orthographic images of them, and may also develop stronger, and perhaps more automatically retrievable mental images for words. Current interesting studies point to the importance of strengthening the entire "word form" for words, including their phonology, orthography, morphology, history, and meanings (Berninger, Abbot, Billingsley, and Nagy, 2001; Wolf and Katzir, Cohen, 2001). It is possible that strong orthographic mental images not only strengthen accuracy in word reading, but also lay the groundwork for later automatically in reading, which in turn helps comprehension (Garner, 1990; 2002; Andzayi, 2001).

An important future domain is awareness and practice of articulatory features of sounds for phoneme discrimination and as a potentially stronger base for phonological awareness (Colit, 2004). It could be used as an option by teachers who like this approach, and it is likely to be of special importance also for non-native speakers who are learning to read English (Berninger, Abbot, Billingsky, and Nagy, 2001; Wolf and Katzir – Cohen, 2001). The work of Elbro (1998) and Snowling and Hulme (1994) lend support for the possibility that refining articulatory knowledge and precision could improve the preciseness of underlying phonological representations of poor readers.

Meanwhile attention has been on validation of beginning reading skills, but it is only when an instructional strategy is employed that such validation is said to be verified. In this study, the validation of the beginning reading skills involved the application of three structured methodologies (phonics, whole language and interactive approaches). Hypotheses one to three tested the effectiveness of these methodologies in

teaching the beginning reading skills. The results indicate them effective, although the range of their effectiveness varied to some extent. The results reported in this study call to mind the "great debate" in respect of contesting teaching methods.

For many years, the best method in which to teach children to read and write has been discussed, debated and deliberated at length. Educators have felt tremendous pressure to choose between two dynamic and completely divergent schools of thought each of which has its own long list of benefits and shortcomings. Traditional curricula proponents are adamant that reading instruction should reflect a time-honoured reliance on phonics, which is essentially a vigorously structured, repetitive and uncreative approach to learning (Adam, 1990). However, in recent years, numerous educators have begun to embrace a "whole – language" approach instead; a method that is far more liberal and creative than the traditional phonics techniques (Mann, 1993). The whole-language approach has become so popular in certain areas that it has ignited a powerful pre-phonics backlash (Bender, 2002). This has further fueled the debate, causing pre-phonics and anti-phonics advocates to but heads more furiously than ever before. Many experts anticipate that the current debate will ultimately lead to a healthy balance between the two approaches, cordially blending the best of the new methods with the best of the old. Weaver (1990) defines the whole language approach as a belief system about the nature of learning and how it can be fostered in classrooms and schools. In whole language, language is kept whole, not fragmented into "skills", literacy skills and strategies are developed in the context of authentic literacy events, while reading and writing experiences permeate the whole curriculum (Bender, 2002; Umolu, 1997).

In a typical whole language programme, children read and write daily in the context of meaningful literacy activities. They use cues from print, such as configuration clues and context clues, to decode words. They are taught to recognize whole words by

memorizing them one word at a time. Whole language is not like the phonics approach, in which children learn syllables and phonetic word-attack skills that allow them to decode unfamiliar words (Kameenui, Carnine, Dixon, Simmons, and Coyne, 2002). Reading, oral and written language are considered as a whole rather than as separate skills (Orange, 2002), and is most effective when children are allowed to learn by doing, that is they learn by doing – preferably, without fear, ridicule, embarrassments, or shame. This appears to explain why the results for the use of whole language proved effective. Children, using this method had the opportunity and freedom to explore reading and writing processes and followed the whole to part- strategies of the whole language method in studying word parts and their sound relationship.

Proponents of whole language believe that children should learn to read without direct instruction, similar to the way they acquire language. The whole language instruction programme has come under fire and gained notoriety as one of the opponents in the famed "reading wars". Opponents are harshly critical of the whole language programme. Williams (1994) refers to whole language as dressed-up version of the obsolete, discreted look-say technique of reading. But several strands run through most interactions of whole language: steadfast focus on making meaning in reading and expressing meaning in writings; constructivist approaches to knowledge creation, emphasizing students' interpretations of text and free expression of ideas in writing; emphasis on high-quality and culturally-diverse literature; and integrating literacy skills into other areas of the curriculum. Others include frequent reading with students in small "guided reading" groups, to students with "read aloud" and by students independently; focus on motivational aspects of literacy; meaning – based phonics, often taught as an "embedded" part of other reading lessons; and reduced emphasis on other skills, besides

phonics, that are usually not linked directly to developing meaning such as grammar and spelling (Kintsch and Kintsch, 1997; Kintsch, 1998).

The idea of "whole language has its basis in a range of theories of learning (called epistemologies) related to "holism". Holism is based upon the belief that it is not possible to understand learning of any kind by analyzing small chunks of the learning system. Holism was very much a response to behaviourism, which emphasized that the world could be understood by experimenting with stimuli and responses. Holists considered this a reductionist perspective that did not recognize that "the whole is greater than the sum of its parts." (Moats, 2000, p1). Analyzing individual behaviours, holists argued, could never tell us how the entire human mind worked. This is in simplified terms - the theoretical basis for the term "whole language" (Routman, 2003).

Whole language posits the existence of three "cuing systems" that regulate literacy development. These cuing systems are the graphophonemic cuing system, the semantic cuing system, and the syntactic cuing system. These three systems, which overlap, help us read (Mills, O'Keefe, and Kennings, 2004). Because reading is a holistic system, proponents say that pronouncing individual words can sometimes involve the use of all three systems (letter clues, meaning clue from context, and syntactical structure of the sentence) (Ray, and cleaveland, 2004).

Because of this holistic emphasis, whole language is contrasted with skill-based areas of instruction, especially phonics. Phonics is a commonly used technique for teaching students to read. Because they de-emphasize the individual parts of learning, tending to focus on the larger context, whole language proponents do not favour some types of phonics instruction (Moats, 2000). Interestingly, some whole language advocates state that they do teach and believe in, phonics, especially a type of phonics known as embedded phonics (Mills, O'Keefe, and Jennings, 2004).

In embedded phonics, letters are taught during other lessons focused on meaning and the phonics component is considered a "mini lesson". Instruction in embedded phonics typically emphasizes the consonants and the short vowels, as well as letter combinations called (rime)s or phonograms (Owocki, and Goodman, 2002). The use of this embedded phonics model is called a "whole-part-whole" approach because, consistent with holistic thinking, students read the text for meaning first (whole), then examine some features of the phonics system (part) and finally use their new knowledge to read stories (whole) (Moats, 2000).

Whole language is a currently controversial approach to teaching reading that is based on constructivist learning theory and ethnographic studies of students in classroom (Reyhner, 2002), "associated with the work of Ken and Yetta Goodman at the University of Arizona" (p.2). With whole language, teachers are expected to provide a literacy rich environment for their students and to combine speaking, listening, reading and writing. Whole language teachers emphasize the meaning of text over the sounds of letters, and phonics instruction becomes just one component of the whole language classroom (Gayan, and Olson, 2001).

The constructivist learning theory is based on the idea that children learn by connecting new knowledge to previously learned knowledge (Reyhner, 2002), and the term is a building metaphor that includes students using scaffolding to recognize new information. If children cannot connect new knowledge to old knowledge in a meaningful way, they may with difficulty memorize it (rote learning), but they will not have a real understanding of what they are leaning (Kintsch, 1998). Students who come from "high literacy" households, where young children are read bedtime stories on a regular basis, there are lots of children's books, and adults read regularly, tend to learn to read well regardless of the teaching approach used (Reyhner, 2002). These students tend

to enter school with large vocabularies and reading readiness skills (and sometimes they already can read (Moats, 2000). On the other hand, students from "low literacy" households are not exposed much to reading in their homes and tend to have smaller vocabularies, may speak non-standard dialects of English and can be unmotivated students, (Reyhner, 2006). It is argued, according to Reyhner, that standard phonics approaches can be unsuccessful for these students. Whole language approaches encourage teachers to find reading material that reflects these students language and culture (p.3).

Phonics, or skills-based instruction, begins with reading lessons that focus on sounding out first letters, and then combination of letters, tightly controlled vocabulary, and short "basal" (or basic) reading passages, followed by numerous skills exercises, each with only one correct answer (Staresina, 2003). Proponents of skill-based or phonics instruction maintain that children are better able to decode words on their own after learning how to decode letters, sounds, and letter groupings (Arbruster, Lehr, and Osborn, 2001).

Phonics supporters generally agree that by employing a direct approach in regards to instruction, as well as providing an undeviating focus on logical sequencing and multisensory techniques, students will effectively learn to identify words quickly and consistently, as well as improving their spelling, vocabulary, handwriting, listening, and thinking skills (Price, 2006). Numerous studies have shown that the most critical factors underlying fluent word reading are the ability to recognize letters, spelling patterns, and whole words effortlessly, automatically, and visually (Staresina, 2003).

Phonics is an approach to reading instruction that focuses on learning the names and sounds of the 26 letters of the alphabet letter-sound relationships, combinations of sounds and word sounds (Orange, 2002). The explicit approach, which was used in

teaching phonics years ago, involves moving from the smallest part to the whole. Students learn letters, then sounds, combinations, and words. Phonetic instruction may vary with explicit phonics (Hiskes, 2000:26), which include phonemic awareness, knowledge of the interrelationships of letters and sounds, sounding out letters, blends, and words, using configuration clues, tracing letters, and using decodable texts, to reinforce skills and practice reading (Routman, 2003).

Ball and Blachman (1991) present several sets of students that, they claim, show that systematic intensive phonics is effective for second language acquirer. One set consists of studies of a programme, called "Success for All", which utilizes intensive systematic phonics introduction. Ball and Blachman claim that "Success for All" has been shown to be more effective than comparison programmes, and conclude that this is evidence for the superiority of intensive systematic phonics. But "Success for All" is much more than systematic phonics (Mills, O'Keefe, and Jennings, 2004). Unless comparison groups follow identical curricula but do not use systematic phonics, we cannot conclude that it was the phonics component that made the difference.

Strategic integration refers to the planful consideration and sequencing of phonological and alphabetic tasks to promote reading acquisition. It occurs when previously learned phonological skills are integrated with new skills, such as letter-sound correspondences. Though phonological awareness plays a casual role in reading acquisition, the review of the research indicated that phonological awareness is necessary but insufficient for successful reading acquisition (Smith, Simmons and Kameenui, 2005). Alphabetic understanding is also a prerequisite to learning to read new words independently. Consequently, strategic integration of letter-sound correspondence instruction with phonological awareness is necessary in beginning reading instruction (Routman, 2003). Such a combination helps children acquire alphabetic understanding

and improves their phonological awareness better than phonological awareness instruction alone. In addition, researchers have found that the effectiveness of phonological awareness/letter-sound correspondence instruction is strengthened by integrating direct instruction in reading (Cunningham, 1990; Snowling, 1991).

The sequence, derived from research, characterizes the strategic integration of phonological awareness, alphabetic understanding and reading instruction (Ball, and Blachman, 1991; O'Cnnor, Jenkins, and Slocum, 1993); such include; Begin with phonological awareness activities (e.g., teach detection and segmentation; use simple phonological units (e.g. 1 – 2 phonemes, continuants) and focus on initial sounds; after student mastery of simple phonological awareness skills, introduce letter-sound correspondences for phonemes used in phonological awareness activities; and increase the complexity of phonological units over time (e.g., 3 – 4 phonemes, stop sounds, final and medial sounds); with the application of knowledge and strategies gained to decode words. When students know sufficient numbers of letter sound correspondences, reading instruction should begin, that is blending and segmenting, concurrently with phonological awareness instruction. Instructions should be designed by attending to interactions among continua of difficulty for each dimension and for each characteristic of each dimension. There is also need to continue with additional letter-sound correspondences (Orange, 2002).

The phonics emphasis in reading draws heavily from behaviourist learning theory that is associated with the work of the Harvard psychologist B.F. Skinner (Reyhner, 2002). Behaviourist learning theory is based on studies where animals such as pigeons learned to do tasks when they received rewards and extinguished (stopped) behaviours that were not rewarded or were punished. Reward in this regard to phonics method

would include sound and skills emphasis and gain. Rose (2005) interim findings review

on the teaching of reading indicates that the:

> *"Approach which is generally understood as "synthetic" phonics offers the vast majority of young beginners the best route to becoming skilled readers. Unfortunately, determining what constitutes best practice in "Synthetic" phonics is by no means clear-cut. This is because seemingly small differences in practice are often amplified as strongly held, conflicting views, even among those who champion "synthetic" phonics. In consequence, there is a somewhat futile debate that risks distracting attention from the important goals of understanding how beginners learn to read and write and shaping practice accordingly" (p.21).*

Dombey (2005) observes that children need more than just phonics in the uphill

tasks of reading. According to her, our knowledge of the best way to teach reading has

moved on since 1997, thanks to the insight that successful teachers and schools might

have something to us. But what large studies on both sides of the Atlantic have shown is

not that synthetic phonics is the golden gateway. They tell a rather different story (p.5).

Specter (1995) wrote:

> *"It is vital children are taught to identify and blend sounds for reading and to segment and spell sounds for reading and to segment and spell sounds in words for writing. Whether this is analytic or synthetic depends on which of the many definitions you plump for. For the literacy strategy, the polarisation is largely irrelevant. What matters is that children are systematically taught the phonic code and that they learn to apply this along with other strategies to develop fluent and accurate reading and spelling" (p.6)*

Sticht (2005) makes an observation on synthetic phonics and the shift from oracy

to literacy lessons from adult literacy research. Of particular reference is the published

special issue with title *The Fourth- Grade Plunge: The Cause, the Cure.* The cover of the

special issue includes a summary that states: In primary four, poor children's reading

comprehension starts a drastic decline and rarely recovers. The cause: They hear millions

fewer words at home than do their advantaged peers – and since words represent

knowledge, they don't gain the knowledge that underpins reading comprehension. The

Cure: Immerse these children, and the many others whose comprehension is low, in

words and the knowledge the words represent as early as possible" (p.7).

However, Nursery World, (2005) came up with an article titled, "*Phonics readers*" "*outperform peers*". According to this publication, children who have been taught to read using "synthetic phonics" are more than three years ahead of their peers by the end of primary school, a study has found. The programme, piloted in 19 primary schools, was part of a seven-year study conducted by psychologists at St Andrews and Hull universities. From primary one stage, 300 children spent 20 minutes a day learning the technique. At the end of primary 7, when the children were around 11 years old, they had a reading age of 15. Experts told the House of Commons education select committee in February 2005 that schools that use only phonics to teach children to read outperform those using the mixture of methods recommended in the Government's national literacy strategy.

Synthetic phonics involves blending letter sounds to form words, rather than recognizing words on sight. The system is now in use at 300 schools in Scotland and England. But language and early years expert (Nursery world 2005) urged caution in hailing phonics as the "magic answer" in the early years. She said, "I think up to the age of six, children must have a very broad and rich experience of literature. Then when children emerge as readers they may benefit from phonics. We must not take two narrow an approach that pushes children into small pieces of text and away from books". She said the intensive coaching the children in the study received could have helped them do well, but then asked, whether the children are still committed and passionate readers and do they read a range of different text? (p.11).

But Price (2006) reflecting on whole language, phonics and reading is confronted by what he regards as a mystery: why did our schools use reading instruction that did not instruct children how to read? Starting around 1930 whole language (aka look-say) took over education. The take over lasted more than 60 years. The debate continues but

phonics is back on top. Price is working on a tribute to Rudolph Flesch, whom he (Price) named, "the lonely prophet" who wrote *"why Johnny can't Read"* and 25 years later, *"Why Johnny Still Can't Read"*. Price, observes, "Everything he said seems to "me" common sense. But the educational establishment, to a remarkable degree, was able to ignore him, stonewall him and discredit him. How? Why?" (p.1).

Price, finds only two viable theories to explain this mysterious bit of history: (1) Our top-level educators were earnest bumblers, a gang that couldn't shoot straight. Inevitably such people would embrace counter productive theories that would actually keep kids from reading (2) Our top-level educators were clever subversives who pushed look – say (whole language) as a way to level or dump down millions of students. He asks: can anyone suggest another theory? Would someone knowledgeable about this mystery care to send me an anecdote or a citation that explains what to place behind the scenes? He observes that the real questions have certain motive, and asks if people pushing look-say were sincere but misguided, or were they consciously promoting a bad idea for ideological reasons? He would like to be able to understand them better.

Perhaps a programme which is primarily phonics-oriented is best (Bender, 2002), however, the teachers in the classrooms should not be exclusively phonics – oriented. Bender observes that we should use a phonetic approach to word study, but it should be amply supplemented with stories, experience charts, sigh words, word comparisons, writing and writing skills, etc, to make language relevant. Both systems have something good in them as long as we do not get carried away with their dangers (Pressley, 2001; Coles, 2003). Words are to be read, to be read accurately, but words are never an end in themselves; and are for communication (Bender, 2002).

All that have been discussed with the observations on the extreme points of both whole language and phonics methods would have called to mind the third instructional

approach investigated in this study. Interactive method was also found to effect reading gains as results show that treatment involving the method was effective in helping the children to learn the beginning reading skills. Following the continued debate among the supporters of whole language and phonic approaches, it appears the interactive approach provides the most viable alternative to the extremes of the two. A combination of both approaches generates an effective mixture of instructional philosophies, and therefore accommodates a wide variety of learning styles (Orange, 2002). The curriculum needs to allow creative freedom for teachers to search and find the balance in their own classrooms (Coles, 2003). By combining quality literacy with information about letters and sounds, children have the disposition to read and the tools they need to become proficient readers, writers and human beings (Allington, 2002).

The sensational exposure on widespread illiteracy that was rampant early in the 20th century marked the onset of the famed "reading war" that would rage on for decades. The public entry was that schools were not teaching children how to read – who or what was to blame? (Allington, 2002). Over the years, the gradual emergence of reading techniques based on various philosophies sparked the controversy known as the reading wars. At the centre of the reading wars debate was the issue of which reading technique was effective and which was ineffective (Orane, 2002). Amidst the finger pointing of proponents and opponents of both whole language and phonics, the question loomed, which was better? Phonics or whole language (Coles, 2003). Around the late 1990s, educators started entertaining the possibility that it could be both (Orange, 2002). Ausselin (1999) proposed combining whole language and phonics into a balanced reading programme, referred to as balanced literacy (Allington, 2002). Balanced literacy is a recognition that the two approaches to reading are different, yet complementary, and when used appropriately can yield very effective results. Balanced or interactive

approach (to reading) involves the integration of listening and speaking within an independent or group reading and writing format (Orange, 2002).

Dombey (2005) indicates that most effective teachers use a variety of approaches, with a clear focus from the start on both the technical aspects and the making of meaning. They put a high premium on engaging their pupils, helping them to see reading as a way of enlarging their experience, not just as a set of exercises to be carried out to please the teacher. Effective teachers recognise that children need to read large amounts of engaging text to become better at it (Moats, 2000).

Effective teachers certainly teach phonics, but many use a combination of synthetic and analytic phonics, so that children learn to spot patterns and draw analogies (Dombey, 2005). In this way they are enabled to tackle words such as "fall" and "fast", where, although the spelling is regular, the vowels are not readily amenable to "sounding out". Successful teachers and administrators also know that phonics is only one piece of the reading puzzle (King and Torgesen, 2000; McEwam, 2001a). Without ongoing instruction in cognitive strategies, the continual development of language skills, the deepening of knowledge through solid content area instruction, voluminous reading in all types of text, and daily opportunities to talk and write about what is read using the conventions of spoken and written language, any gains realized in the classes will disappear by the upper classes (McEwan, 2002). Conversely, without a phonics foundation, students would not even have the option of becoming literate (Foorman, Fletcher, Francis, and Schatschneister, 2000).

Attention at this point is turned to research findings related to how best to teach reading skills. The question at the centre of the "Great Debate" was, what does evidence have to say about the effectiveness of direct instruction – explicit phonics – compared with whole language instruction or implicit phonics? Should beginning instruction focus

on directly teaching the correspondences between letters and sounds (phonemes)? The logical answer to this question appears to be that these correspondences, and the alphabetic principle they instantiate, should be the central initial focus of isntruction (Routman, 2003). However, the tendencies of actual practice have been otherwise. A variety of alternative pedagogies have emphasized instead meaning focused instruction built around story reading exposure to print and enhanced language environments (Owocki, and Goodman, 2002).

Although initially, for beginning readers, whole-language classrooms performed better on measures of comprehension and reading rate, in later classes the advantage of decoding – based instruction became highly general, encompassing spelling, word recognition, and comprehension. The conclusion, in its general form, was confirmed in later less comprehensive reports (Coles, 2000).

Adams (1990) provided a thorough treatment of these research reports and, methods in the context of research findings. Furthermore, she put the Great Debate in its historical context and explained why there has been so much resistance to the direct teaching of decoding. An emphasis on meaning and comprehension not only coincides with the main goal of reading, but also appeals to beliefs that the child's experience in school should reflect purposeful learning in authentic contexts. In that spirit, the exclusive use of commercially published children's literature (which is often not decodable) has become characteristics of whole language classrooms. Modern phonics advocates point out that there is nothing incompatible between these meaning values and good phonics instruction, which aims to quickly provide the child with the basics of the letter-sound system of practice with decodable texts while at the same time introducing children's literature (Armbruster, Lehr, and Osborn, 2001). Adams (1990) argued that

phonics approaches were more successful than non phonics approaches in teaching children to read.

The National Research Council (NRC) (the research arm of the National Academy of Sciences) revisited this issue in its report "Preventing Reading Difficulties in Young Children" (Snow, Burns, and Griffin, 1998). While reports that have focused on the question of how to teach reading, the NRC report asked how available research findings can inform recommendations directed at reducing children's reading difficulties. Although the NRC report steered clear of specific curriculum recommendations, it emphasized the importance of promoting knowledge and practice in decoding. For example, it recommended that early primary school instruction "designed to provide practice with the sound structure of words, the recognition and production of letters knowledge about prints and familiarity with the basic purposes and mechanisms of reading and writing. It concluded that research shows that beginning reading "depends critically on mapping the letters and the spellings of words into sounds and speech unit that they represent (p.321). Furthermore, counter to the idea that somehow comprehension can proceed on its own, the report added that "failure to master word recognition impedes text comprehension" (p.321).

The NRP (2000) study is valuable for what it found in the alphabetic area and what it did not find in the other areas (the Committee decided that there was generally not enough good quality research to make valid conclusions in some areas). The report noted the validity of the research discussed previously in the section on phonological awareness. With respect to phonics instruction, the report revealed that (a) systematic phonics instruction produces significant benefits for students in preprimary through primary six and for students with reading disabilities, (b) the impact of phonics is strongest in the early primary school classes, and (c) phonics must be integrated within

phonological awareness, fluency, and comprehension. The report noted that a strong empirical base supports the importance of instruction in phonological awareness in conjunction with phonics instruction. However, the report also noted that there are not enough data to draw conclusions about the best way to teach vocabulary, fluency and comprehension, or the best way to prepare teachers to teach reading.

The results of some important experimental studies suggest two interrelated conclusions: First, learning correspondences between letters and sounds is more productive (so there is more transfer to new words) than learning whole words, even though learning whole words may be faster at first. Second, providing instruction that lets children infer these correspondences may not be as effective as directly teaching them (Foorman, Francis, Fletcher, Schatschneider, and Mehta, 1998). The laboratory research has long established the value of learning letter-sound correspondents for productive transfer of reading skill. Other laboratory studies with children have shown how difficult acquiring these correspondences can be in the absence of instruction (Rayner, Foorman, Perfetti, Pesetsky, and Seidenberg, 2001).

Classroom studies of teaching reading typically have compared phonics instruction with some form of nonphonics (whole-word or whole-language) instruction. There have been many readers of the NRC (Snow, Burns, and Griffin, 1998) and NRP (2000) reports. All of these reviews concluded that systematic reading instruction produces somewhat higher reading achievement for beginning readers compared with the non-phonics alternative. Results are most impressive for students at risk for reading failure, such as children with learning difficulties ((Rayner, Foorman, Perfetti, Pesetsky, and Seidenberg, 2001). For disadvantaged students, the link between explicit instruction and achievement was notable, a finding supported in other classroom observation research (Pappano, 2001).

In response to the assumption that practice occurred in literature-based classrooms and not in skills-based classrooms, some recent research contrasted these two approaches The literature-based perspective is grounded in reader response theory, according to which readers play a central role in the construction of meaning, and in social − constructionist theory, according to which literacy is acquired in a book-rich context of purpose communication. Literature-based instruction emphasizes sustained use of authentic literature for independent reading, reading aloud, and collaborative discussions, skill based programmes, in contrast, are typically defined as traditional programmes that use a commercially available basal reading programme and follow a sequenced skills ordered according to their difficulty (Fasel, Fortenberry, and Movellen, 2004).

Systematic phonics instruction falls under this definition of skills-based programmes, whereas literacy acquisition in preschool and at the elementary level (Freppon, 1991; Purcell- Gates, McLintyre and Freppon, 1995; Reutzel and Cooter, 1990). Recently, the combination of literature-based instruction with traditional basal reading instruction has been found to be more powerful than traditional instruction alone (Dahl Scharer, Lawson and Grogan, 1999; Morrow, 1992); and balanced reading instruction seems to be replacing literature-based reading instruction (Fitzgerald and Nobit, 2000; Pressley, 1998), as the pendulum of reading rhetoric swings away from whole − language approaches towards phonics (Rayner, Foorman, Perfetti, Pesetsky and Seidenberg, 2001).

While whole-language proponents were advocating the virtues of literature-based instruction and undermining phonics and skills based instruction in the 1980s and 1990s researchers continued to examine how children's reading development was affected by the interaction of their characteristics with instructional factors. These researchers

addressed the complex mapping of phonology to orthography that are required when learning to read English (Adams 1990; Ehri, 1998; Foorman, 1994; Harm and Seidenberg, 1999, and Perfetti, 1992); they also appreciated that phonics is an ad hoc system of 90 or so rules for teaching reading that provides only a beginning focus on grapheme-phoneme relations, when infact, there are as many as 500 spellings-sound connections that must be learned (Gough, Juel, and Griffith, 1992).

Because of the sheer number of these connections, self-teaching is hypothesized as the mechanism by which children continue their reading development beyond basic levels. Self-teaching assumes a foundation of phonological awareness and decoding skill upon which to bootstrap new orthographic information. Several researchers have investigated how this knowledge interacts with instruction in classroom settings, and found that if the dominant instructional strategy in the classroom was decoding unknown words letter by letter, children learned the strategy quicker and went on to infer untaught letter-sound relations faster if their beginning reading textbooks contained decodable text. This was particularly true of children with low initial levels of skill (Adams, 1990; Ehri, 1998; and Harm and Seidenberg, 1999).

Foorman, Francis, Novy and Liberman (1991) found that students in three first-grade classrooms with more letter-sound instruction improved at a faster rate in reading and spelling than students in three first-grade classrooms with less letter-sound instruction. Initial scores on phonemic segmentation tasks predicted reading and spelling outcomes for all children. Exploratory data analysis revealed that children who were slow to improve in phonemic segmentation were also slow to spell and read phonetically, especially among children receiving less letter-sound instruction (Foorman and Francis, 1994).

In a subsequent study, Foorman, Francis, Fletcher, Schatschneider, and Mehta (1998) examined the reading development of 285 primaries one and two children in 66 classrooms in eight, grade one schools to determine how the nature of letter-sound instruction interacted with entering skill in phonological awareness (Rayner, Foorman, Perfetti, Pesetksy, and Seidenberg, 2001). These students scored in the bottom 18% on the early literacy assessment. Foorman, Francis, Fletcher, Schatshneider, and Mehta (1998) found that children receiving direct-code instruction improved in word reading at a faster rate and had higher word recognition skills than those receiving implicit code instruction. The improvement was particularly impressive for students who began the year with low phonological awareness. Despite the direct-code group's generally good outcomes, however, 35% of them remained below the 30th percentile in reading achievement (Rayner, Foorman, Perfetti, Pesetsky, and seiderberg, 2001).

The finding that explicit instruction in letter sounds can prevent reading difficulties for children at risk for reading failure because of poor phonological awareness or lack of home literacy has been demonstrated a number of times (Foorman, Francis, Flettcher, Schatschneider & Mehta, 1998; Juel 2000).

The effects of instruction can persist beyond the early primary school classes and they can manifest in spelling as well as reading. Bruck, Treiman, Cavavolos, Genesee, and Cassar (1998) compared spelling in primary three children who had whole language instruction throughout school and primary three children who instead had received phonics instruction. The phonics – instructed children were better spellers and their spelling of psuedowords included more conventional, phonological accurate patterns (Rayner, Foorman, Perfetti, Persetsky and Seidenberg, 2001).

Taylor (1998) indicates that methods of teaching reading should be determined by the nature of the written language that students are learning to read. According to her,

the written language system is a system of representing spoken language with written alphabetic symbols and to read that which has been written one must know the correspondences between written symbols and the speech sounds that they represent. In other words, one must know the alphabetic phonetic code. Furthermore, a high level of mastery is required to ensure that students will be able to apply that alphabetic knowledge rapidly and effortlessly to read words and passages. Automatic decoding is essential to independent reading and the comprehension of complex passages (U.S. Department of Education, 2002).

Intensive and systematic instruction in phonics has been scientifically validated again and again as the most effective means of ensuring that students acquire the automatic decoding skills on which reading comprehension must rest (Adams, 1994; Dickinson, and Tabors, 2001); just as direct instruction in alphabetic coding facilities early reading acquisition is one of the most well established conclusions in all of behavioural science (Stanovich, 1994; Armbruster, Lehr, and Osborn, 2001; Burns, Griffin, and Snow, 1999). Their conclusion regarding the benefits of phonics instruction is not limited to students with a particular "learning style". Empirical research has shown that attempts to match method of teaching with learning style has been unsuccessful (Hall, and Moats, 1998). Despite this evidence, educators continue to tout learning style as the solution to the reading achievement crisis (National Reading Panel, 2000).

In the new learning styles approach, students are classified as either global or analytic learners and matched to either a global or an analytic method of teaching reading. But the global learners and methods of today are strikingly similar to the visual learners and methods of yesteryear, and the analytic learners and methods of today are strikingly similar to the auditory learners and methods of yesteryear. Furthermore, reviews of empirical studies of the new learning styles approach, have revealed a dearth

of evidence to support the approach (Snider, 1992; Stahl and Kuhn, 1995; U.S. Department of Education, 2002). It is important to know that the current learning styles movement is part and parcel of the current whole language movement (Dickinson, and Tabors, 2001).

All students, regardless of hypothesized "style" benefit from intensive, systematic phonics in beginning reading instruction (U.S. Department of Education, 2002). This is not to say that phonics instruction is the only kind of instruction involved in effective reading instruction, as the results of this study indicate. Effective reading programmes provide fluency and comprehension instruction as well as phonics instruction (Armbruster, Lehr, and Osborn, 2001). For example, the Reading Mastery programme by Englemann and colleagues emphasizes shifts to fluency instruction which entails practice through repeated readings of increasingly difficult word lists and passages. By primary three, the emphasis is on comprehension instruction which entails a variety of meaning-getting and meaning-constructing strategies as well as vocabulary expansion and enrichment (Apel, and Masterson, 2001).

In contrast, whole language instruction begins with a focus on the construction of meaning and it is assumed that children will discover phonetic principles as they read for meaning (Dickson, and Tabors, 2001). In critiquing whole language, leading linguists have pointed out that it makes little sense to expect children to rediscover or recreate a complex phonetic code that has evolved over thousands of years. Instead, we should teach that code directly so children can then apply that knowledge to read independently for meaning and enjoyment (Neuman, Copple, and Bredekamp, 2000).

Research experience, and common sense tell us that phonics – first is the way to go true for students who happen to have strong visual and/or global abilities than it is for students who happen to have strong auditory and/or analytic abilities. This does not

mean that children's individual differences are to be ignored – good teaching always entails attention to individual differences. But it does mean that we need not attempt to individualize on the basis of each child's needs in terms of the reading skills that he/she has not acquired (National Reading Panel, 2000).

Our knowledge of how to teach reading to all our students, with all of their diverse and unique learning characteristics, exceeds by far our implementation of that knowledge. It is time for parents, other citizens, and teachers to insist that the educational establishment's fascination with philosophical, theoretical, and political debates be replaced by a commitment to instructional practices that work (Armbruster, Lehr, and Osborn, 2001).

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

The main goal of reading instruction is to help students develop as effective, proficient readers. The operational definition of this goal implies that effective readers come to printed page expecting what they read to make sense. But the greatest continuing problem of our public schools is their failure to teach many children how to read. Most of the academic and behavioural problems had by children in the course of their school careers stem from poor reading. Poor reading skills stem in large part from faulty teaching practices. The evidence relating to the factors underlying the acquisition of reading skills is based on research in a number of English – speaking countries. The findings based on this international body of reading are equally applicable to the Nigerian context.

What needs to be addressed is the critical question of whether the teaching of reading in Nigeria is based on scientific knowledge relating to how children learn to read, and whether the methods used to teach reading in our schools are based on empirical evidence as to the strategies that are most effective in teaching reading. The present study was designed to obtain the empirical validation of beginning reading skills for Nigeria primary schools using three structured methodologies (phonics, whole language, and interactive methods), just as there was need to investigate the application of explicit instruction to develop the necessary beginning reading skills among primary school children.

5.1   SUMMARY

The objectives of this study included to: validate the beginning reading skills following the use of three structured methodologies, verify the efficiency of the data

sourcing instrument developed, and that of the intervention strategies tested in the research. Four hypothesis were stated and tested on the significant difference in the beginning reading achievement skills of primary school children on the basis of the use of three structured methodologies:

Ho$_1$: There will be no significant difference in the beginning reading achievement skills of Nigerian primary school children on the basis of the use of phonics reading method.

Ho$_2$: There will be no significant difference in the beginning reading achievement skills of Nigerian primary school children on the basis of the use of whole language reading method.

Ho$_3$: There will be no significant difference in the beginning reading achievement skills of Nigerian primary school children on the basis of the use of interactive method.

Ho$_4$: There will be no significant difference in the beginning reading achievement skill of the children on the basis of the comparison of the three structured methodologies (Phonics, whole language and interactive).

The study supported the adoption of three reading theories: the top-down, bottom-up, and interactive reading theories, with each focusing on the associated typical reading model. Again, as a matter of significance, it was expected that a study of this nature would address pertinent issues as they related to the major variables of the research and their interpretation in terms of teaching instruction and reading achievement at the primary school level.

Review of related literature and research was carried out on the basis of the major variables of the research topic. The review reflected the subthemes covering: The philosophy of literacy programme; the theoretical background for foundation to literacy;

principles that guide instruction and domains of foundational reading knowledge. Others included, literacy instruction; the great debate; research findings on teaching reading; and empirical research on reading from the local environment. Gaps existed following the review made which were expected to be covered following the execution of the study.

The conceptual framework within which the study was conducted, informed the adoption of an experimental study, which involved pre-experimental – post-experimental test design. By this design, all subjects that made up the three experimental groups for which the three structured methodologies were adopted, took the pre-experimental test before the experiment, and the post-experimental test at its conclusion.

The environment for the study was Jos North Local Government Area of Plateau State, Nigeria. The research population included all the primary school children in the defined local government area, at the beginning reading stage, while the research sample included two hundred and seventy primary four pupils with reading problems, operating at the beginning reading stage, and were drawn from three large population primary schools involved in the study.

The major instrument for data collection was the "Beginning Reading Achievement Assessment Instrument", the researcher constructed instrument based on the need to understand the critical skill abilities, and instructional interactions that foster the fluent reading and comprehension of text.

Methods of data collection included: procedures for teacher training; treatment procedures, and data collection within groups. For the purpose of testing the hypotheses data were collected and arranged in line with the pre-experimental and post-experimental text scores for the three major groups that used the three structured methodologies. Different statistical tools were applied for the purpose of testing the four stated hypotheses which included: t-test, analysis of variance (ANOVA), and post hoc tests.

Results of hypothesis one through three indicated, the treatment involving the three structured methodologies (phonics, whole language and interactive methods) were effective in helping the children to develop the beginning reading skills. Furthermore, the variety in the level of their effectiveness required further analysis to determine the range of effectiveness and which method remained most effective. The result of the post hoc tests indicated their range of effectiveness with phonics method identified the most effective followed by interactive method before whole language method, although the differences between the last two methods (interactive and whole language) was not significant.

Evidence from this study has suggested the validation of the beginning reading skills following the use of the three structured methodologies. The findings have been supported by authorities derived from relevant portion of the reviewed literature. The observations of such cited authorities informed the discussion that substantiated the research findings.

The study required the investigation of the methods responsible for the acquisition of basic reading skill among beginning readers in the primary school setting. There was the need to ascertain the effects of the teaching methods including the determination of the most effective method among the three (phonics, whole language and interactive) methodologies.

The study therefore set out to achieve the following:

1. Mount and conclude experimental treatment involving the application of the three structured methodologies (phonics, whole language and interactive methods).

2. Establish results following the testing of the stated hypotheses on the effects of each of the experimental methods on the pupils' reading achievement.

3. Compare the effects of the three methods including their ratings based on multiple comparisons of their mean difference.

4. Initiate the use of a beginning reading assessment instrument for the purpose of data collection.

5.2 IMPLICATIONS OF THE RESULTS FOR THEORY AND PRACTICE

Since the 1960s, classroom studies of reading methods have consistently shown better results for early phonics instruction compared with instruction emphasizing meaning at the level of words and sentences. This effect is particularly strong for children at risk for reading failure because of lack of home literacy or weak phonological-awareness skills (children who have attention problems, chronic ear infections, articulation problems, or a history of dyslexia in their families). This interaction between children's characteristics and curricular focus is underrated by instructional factors such as teachers' knowledge and competence.

Thus the kinds of materials (curriculum) and instructional strategies used interact with a child's stage of reading development in determining the child's success in learning to read. This fact has important policy implications for improving literacy levels nation wide. At the international level, reading methods have become highly politicized and the Great Debate has turned into the reading wars. Proponents of literature-based instruction (Coles, 2000; Taylor, Anderson, Au and Raphael, 2000; Taylor, 1998) have attacked research supporting skills-based instruction, despite the fact that this research investigates processes fundamental to learning to read rather than skills-based instruction per se.

In return, skills-based researchers have pointed out how these attacks have misrepresented the research and are based primarily on philosophical objectives

(Foorman, Fletcher, Francis and Schatchneider, 2000, Mathes and Torgesen, 2000). Despite the controversy, there is no question that continued scientific study of what constitutes effective reading instruction would benefit children and teachers by improving understanding of how particular children best learn to read.

To the extent that the theoretical foundation of a particular approach to reading instruction can be questioned, the approach itself can be questioned. The converse is also true, that is, if critical assumptions may be warranted. It may be fair to say that the major theoretical assumptions on which whole language approaches to instruction are based have simply not been verified in relevant research testing those assumptions, until this study being reported. Aside from the fact that there are very sound reasons to reject the "natural" parallel between spoken and written language drawn by whole language theorists, the research supports the following generalizations:

a.   The most basic skills in learning to read is word identification. The need to have accurate knowledge of the initial letter sounds of the words along the sounds of the word parts will encourage adequate verbal labeling.

b.   An adequate degree of fluency in word identification is a basic prerequisite to successful reading comprehension. This involves adequate training on sound-letter relationship, including initial consonant sounds, consonant diagraphs and blends. Mastery of these basic skills will afford appropriate knowledge and understanding of both the high frequency and interest words used in reading, more especially at the beginning reading stage.

c.   Word identification in skilled readers is a fast-acting, automatic and in effect modular process that depends little on contextual information for its execution. With adequate training in phonological awareness, knowledge and understanding of words become easy and reading is made both smooth and motivating in effect.

d.   Even skilled readers can accurately predict no more than one word out of four in sentence contexts, indicating that the predictive role of context must be extremely limited. This is therefore interpreted in terms of the need to teach phonological awareness skills at the beginning reading developmental stage.

e.   Because of limited facility in word identification, beginning and poor readers are more dependent on context than are more advanced and good readers. There should therefore be more emphasis on structural analysis that include sound-letter relationship.

f.   Facility in alphabetic coding is critically important to the acquisition of skill in word recognition. Understanding of the way letters are used in writing and combined to form words (alphabetic principle) is important for beginning reading development and achievement at the early stage.

g.   Phoneme awareness and facility in phoneme analysis are critically important to the acquisition of skill in alphabetic coding. The understanding of sound-letter relationship and knowledge of initial consonant sounds, consonant blends and diagraphs are what it takes to develop the skills of reading and writing.

Each of these generalizations could be seen to be contrary to the approach to reading instruction advocated by whole language proponents. But they have constituted the major reasons for confirming phonics the most effective method, followed by interactive method (which is a combination of phonics and whole language methods), before the whole language method itself. This is as the results generated by the findings of this study, supported by those reviewed in the literature, add substance to each of the generalizations.

The implications of the research for teaching children to read should be apparent. The most basic dictate seems to be that instruction that promotes facility in word

identification is vitally important to success in reading. Accordingly, instruction that facilitates both phoneme awareness and alphabetic coding is vitally important to success in reading.

However, following the research findings as established in the generated results of this study, there is nothing in the research that precludes the use of whole language-type activities in teaching reading. These activities include: the use of context for monitoring and predictive purposes, vocabulary enrichment to imbue comprehension. Others include, integrated reading, writing and spelling to concretize the relationships between and among these representational system results and so forth.

On the other hand, with due consideration to the generated results and findings of this study, the research runs counter to exclusive versions of either whole language or phonics (code-oriented) approaches to reading instruction. The research supports interactive (a combination of phonics and whole language) method as well.

5.3   CONCLUSION

The results of the study following the testing of the hypotheses have warranted some conclusions to be drawn. Such findings to a reasonable extent would have addressed the issue of whether the teaching of reading in Nigeria is based on scientific knowledge relating to how children learn to read, and whether the methods used to teach reading in our schools are based on empirical evidence. It would be recalled that the present study was designed to obtain the empirical validation of beginning reading skills for Nigerian primary schools using three structured methodologies. This was investigated following the application of explicit instruction to develop the necessary beginning reading skills among primary school children.

Base on the results, the following conclusions were made:

1. The three structured methodologies namely: phonics, whole language and interactive methods were found to be effective in helping the children develop the beginning reading skills, although with some variety in the methods' level of effectiveness.

2. The phonics method was found the most effective, followed by interactive method before the whole language method, and

3. The acquisition of the basic reading skills was predicted on the structured methodologies.

It can therefore be inferred from the research findings that the teaching of reading in Nigeria is based on scientific knowledge relating to how children learn to read. Again, the structured methods used to teach reading in our schools have been confirmed on empirical evidence as to the strategies that are most effective in teaching reading. It can equally be suggested that the beginning reading skills stand validated in this study, following the children's acquisition of the beginning reading skills on the basis of the structured methodologies. The results on the test performance scores following the application of the beginning reading achievement assessment instrument confirmed the validation of the beginning reading skills.

There is little question that many Nigerians are concerned about the quality of reading instruction in Nigerian schools. This is more so when considering the need for adequate development and acquisition of basic beginning reading skills among primary school children learning to read.

Two general approaches have emerged from the length and often acrimonious debate over how best to teach young children to read. The first and perhaps oldest is known as a bottom-up, phonics, or code – emphasis approach usually begin by having

children associate sounds with individual letters and letter combinations. The children are then taught the strategy of sounding out or decoding words. They are also taught when to use this strategy in combination with various rules in order sounding out principles.

The second approach, referred to as top – down or meaning – emphasis, is found today mostly in programmes that make use of whole language procedures. Here the teaching of decoding skills is de-emphasized. Instead, children are taught to recognise words largely by appearance and to focus on the overall meaning of a story together with story context cues such as pictures to help them recognized words that may be difficult to read.

The third approach, referred to as interactive method is the proper mix of each in a comprehensive reading programme. Some feel that more emphasis should be placed on the skills – based instruction within a reading curriculum, while others feel that more emphasis should be placed on authentic reading tasks. This study has concluded that at – risk students performed better when explicit, systematic phonics instruction was taught first in their reading curriculum, followed by interactive instruction before that of whole language.

In view of the controversy that continues to surround beginning reading instruction, it is disconcerting to learn that, at present, the major emphasis across Nigeria is on top-down approach. Specifically, the ministry or department of education in each state is authorized to issue a list of approved textbooks for use in all areas of the curriculum. Although it is widely recognized that whole-language programmes contain a number of features that can benefit children in many ways, as this study confirms, the accumulated evidence suggests that whole language may not be appropriate for all children and that for some children, it may even lead to serious reading problems. In

particular, children at risk for reading failure as well as those from disadvantaged backgrounds who lack prerequisite literacy often require more structure and greater emphasis on phonics than most whole language programmes provide.

5.4   RECOMMENDATION

On the basis of the research findings and conclusions derived from this study, the following recommendations have been informed.

5.4.1   Teaching Method for Beginning Readers

Since the teaching methods investigated in this study are proved effective, it is recommended that they (phonics, whole language and interactive) be adopted for the teaching of reading at the junior primary school setting. Such methods should focus on the development of basic reading skills that will promote reading comprehension. Emphasis should be on learning to read (developing reading as tool for learning).

5.4.2   Workshops and Seminars on Beginning Reading Teaching Methods

Workshops and seminars on beginning reading teaching methods should be organized by primary school administrators to acquaint teachers with the knowledge and techniques on effective teaching methods in response to the reading skills the children need to possess before they can benefit from school instruction. It is also recommended that teachers should be exposed to different activities, procedures and strategies for training children in beginning reading skills acquisition and development. The primary school administrators should acquire the beginning reading methods and sponsor their teachers to practice with them. In addition, the general public and parents should be

given talks during seminars and special Parent – Teacher Association Sessions on different methods and procedures for enhancing beginning reading skills.

5.4.3 <u>The Beginning Reading Teaching Methods and Learning to Read</u>

The beginning reading teaching methods with regard to the three investigated (phonics, whole language and interactive) methods should focus instruction in the five components of reading. Efforts should be made toward enhancing the appropriate reading skills warranting reading development at the stage of learning to read.

The reading methods should address the following reading components:

i.   Phonological Awareness – The ability to hear and segment the sounds of reading language must be a focus of attention, particularly for children with reading difficulties.

ii. Phonics – In early stages of reading development, letter – sound relationships should be the focus. Later, phonics should play a role in spelling, word patterns and fix-up strategies.

iii. Fluency – Teachers must model for and guide pupils toward appropriate rate, intonation and phrasing for a variety of texts. Application of the reading strategies and methods, addressing these skills will prevent limited fluency, which becomes a major barrier to comprehension, particularly in primary and school levels.

iv. Vocabulary – This involves word study, including word parts and word families. This extends vocabulary instruction beyond word recognition or short-term memorization. This should be addressed by any beginning reading instructional method.

v. Comprehension Strategies – This involves utilizing background knowledge/schema, clarifying, determining importance, informing, questioning, summarizing and visualizing. All these should be directly taught using the methods.

It is therefore recommended that effective teaching practice with regard to the teaching methods should be matched to specific strategies. Teacher modeling, guided practice and gradual release of responsibility should lead to independent application of the reading methods that will in turn warrant the development of the reading skills necessary for comprehension strategies.

5.4.4   Teaching Methods and Development of Reading as Tool for Learning

Through the enrichment of pupils decoding and phonological awareness, their reading rates are improved. It is therefore recommended that the teaching methods should be adequately employed to develop appropriate skills required for reading. This is more so when success in learning and school in general requires strong and efficient reading as a tool. Reading to learn is only possible when pupils have developed appropriate skills in the process of learning to read.

5.4.5   Teaching Methods and Curriculum Development

The findings of this study are very relevant to curriculum developers. Failure rate on the part of our pupils and students in general has been attributed to poor reading foundation at the beginning reading stage. It is equally recommended that effective beginning reading skills instructional methods are included in the school curriculum. This will warrant teachers to teach the skills and items that are difficult enough to obstruct comprehension.

5.4.6   **Textbook Writing and Publication on Reading Methods**

Textbook writers and publishers are therefore guided by findings of this study to include effective beginning reading skills development exercises. It is also recommended that writers incorporate decoding and phonological awareness exercises into tests. This will greatly enrich reading development in the primary school setting and homes in general.

5.4.7   **Theory on reading Methods and Reading Materials**

Ministries (departments) of education across Nigeria are to provide schools with a balanced selection of offerings in the Language Arts Curriculum. This call for balanced means that both bottom-up, code-emphasis programmes, as well as top-down, meaning – emphasis programmes, should appear on the lists of approved textbook materials.

5.4.8   **Balance in Reading Methods and Materials**

Reading specialists are to encourage teachers, primary consultants, etc, to select beginning reading materials that match children's needs. For some children this selection might entail the use of materials from either meaning – emphasis or code –emphasis programmes whereas for other children the selection might call for a combination of materials from both programmes.

5.5.1   **SUGGESTIONS FOR FURTHER STUDY**

The following areas are suggested for further research which may amplify knowledge related to this field of investigation:

1.   Efforts should be made toward replicating the study investigating the effects of the three (phonics, whole language and interactive) methods in

other parts of the state and country so as to enhance the generalizability of the teaching methods for Nigeria.

2. The effects of the various factors, such as, state, primary school pupils (class 4), reading readiness skills possession, and the teaching methods on pupils' reading achievement should be replicated to find out whether the results will confirm those obtained in the present study.

3. Further investigations should be directed toward exploring the features of the teaching (phonics, whole language and interactive) methods, as this could be used as basis for instruction in the primary school setting.

4. Efforts should equally be made toward the application of reading components (phoneme awareness, phonics, fluency, vocabulary and comprehension strategies) as to effectively target such components, while implementing reading programmes involving the teaching methods.

5. Finally, another area of research should be encouraged on the effects of the teaching methods on the pupils' reading achievement following their success in comprehension strategies at the end of primary four.

5.6   CONTRIBUTION TO KNOWLEDGE

Following this study on the empirical validation of beginning reading skills for Nigerian primary schools using three structured methodologies, the contribution of such investigation to knowledge can be explained thus:

1. Specifically, the study reaffirms the effectiveness of the three structured methods in the acquisition of basic reading skills on learning to read as acceptable to beginning readers, and those with reading difficulties.

2. The study provides evidence for the validation of the beginning reading skills for Nigerian primary schools following the use of the three structured methodologies.

3. The work adds to a novel idea to the utility value of specific approaches to teaching beginning reading to Nigerian primary school children

4. The study provides evidence for the efficacy of both the data sourcing instrument developed and the intervention strategies tested in the research.

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APPENDIX: A

THE BEGINNING READING ACHIEVEMENT ASSESSMENT INSTRUMENT

1.   From the word below, which consonant letter stands for the beginning sound? For
     example: bat = "b" sound: hat "___" sound

2.   Say if the pair of words below begin with the same consonant sound. For
     example; gum ___ get: bee-back.

3.   Say if the pair of words below end with the same consonant sound. For example;
     hug___ beg: job-yet.

4.   Say if the pair of words below have the same consonant sound in the middle. For
     example: baker__hiker: begin-tiger.

5.   Name each letter in the word below. For example: /b/,/a/,/g/:m-a-   n/,/,/,/,/.

If the single consonant letter can make an English word with a part that follows, write the

word down. For example:

	all	<u>ball</u>
b	ell	<u>bell</u>
	tell	<u>X</u>

6.   er___

     h   ate___

          ter__

Say if the underlined letter in each word is a long or short vowel sound. For example:

C<u>a</u>p _____ short vowel sound

C<u>u</u>te _____ long vowel sound

7.   t<u>a</u>pe _____
8.   r<u>i</u>de _____

Underline the word that has a short vowel sound. For example:

     five, <u>had</u>, size

9.   box, nice, rise.

From which tow words is each of the following words formed. For example:

    Birthday = <u>birth</u> <u>day</u>

10.   sunshine = ____ ____

11.   nobody =   ____ ____

Read each sentence for clues to the word with a missing consonant blend.

From the underlined blends below, choose the one that is needed to complete the missing word.

<u>Spr</u> <u>spl</u> <u>scr</u> <u>str</u> For example, the big boy looks strong.

12.   Use this spoon to …ape the inside of the pan.

13.   Our cow ate the …aw.

14.   Some …inles of rain fell this afternoon.

15.   Water … ashed into the room.

       Look at the underlined letter-pairs.

Write the correct letter-pair on each line, after you have read each sentence.

      <u>Ph</u>   <u>Ch</u>   <u>Wh</u>   <u>Sh</u>

For example: <u>sh</u>ow me your <u>wh</u>ite canvas shoes.

16.   Be careful not to … oke, on the …ichen bone.

17.   The man's … ite stiff … iskers looked like an old bru…

18.   Remember to wa … ite … irt after school.

The beginning letters can make English words when each is joined to the part that follows. Write it can a line, as in the example:

m
r   ake

z

<u>make</u>

<u>rake</u>

19.   t

        w ire

        n

Reading each sentence for clues to the word that has a missing part. From the underlined parts below, choose the one that is needed and write it on the line.

<u>ake</u>   <u>ide</u>   <u>ite</u>   <u>ive</u>

For example. My name has <u>five</u> letters for Peter.

20.   The colours of our flag are green, wh …and given.

21.   When you say "Hello", sh… the man's hand.

Underline the group of words that tells the person or thing sentence is about.

For example: <u>The little girl smiled.</u>

22.   My brother's team lost.

23.   The two children sang.

In each sentence, does the underlined part tell what, where or how? Write the correct answer on the line. For example: on the wood is the lizard <u>where</u>.

24.   On the branch sat <u>the</u> <u>birds</u>. _____

25.   <u>With</u> <u>great</u> <u>speed</u>, the car crossed the road.

SCORING GUIDE

1. hat – "h" sound – 1mk.

2. bee __ back – 1mk.

3. job __ yet – 1mk.

4. begin __ tiger – 1mk.

5. m-a-n- - 1mk.

6. her, hate – 1mk.

7. __ long vowel sound – 1mk.

8. __ long vowel sound – 1mk.

9. __ box – 1mk.

10. __ sun – 1mk.

11. __ no body – 1mk.

12. scrape – 1mk.

13. traw – 1mk.

14. sprinkles – 1mk.

15. splashed – 1mk.

16. choke, chicken – 1mk.

17. white, whishers, brush – 1mk.

18. wash, white, shirt – 1mk.

19. tire, wire – 1mk.

20. white – 1mk.

21. shake – 1mk.

22. My brother's team – 1mk.

23. The two children – 1mk.

24. what – 1mk.

25. how – 1mk.

1 mark for each item (1-25).

TOTAL = 25 Marks.

APPENDIX: C

TRAINING SCHEDULE

WEEK 1	ACTIVITIES	REMARKS
DAY 1	Explanation of the importance of reading skills to reading development and principles of reading strategy teaching. Questions and answers.	The researcher ensure active participation by asking questions and by inviting questions from the teachers.
2	Types of reading skills and the principles guiding their teaching	Invites teachers to highlight the key points.
3	Demonstration of teaching phonics approach (method A). Explanation of main points.	Direct teachers to practice the method at home
4	Practice of method A instruction in phonics approach by the teachers.	Encourages the other teachers to critique each presenter.
5	Highlights of strengths and weaknesses of the presentation and discussions. Further practice by teachers.	This is to consolidate gains, highlight the points and effect corrections if any.
WEEK 2 DAY 6	Demonstration of teaching whole language approach (Method B). Explanation of points of demonstration, pointing out the clues that aid reading skills acquisition.	Direct teachers to practice the method.
7	Practice of method B. Whole language approach by the teachers.	Other teachers are encouraged to react to each presentation.
8	Highlights of strengths and weakness of the presentation and discussion. Further practice by teachers.	This to consolidate grains highlight the points and effect corrections if any.
9	Demonstration of teaching phonics approach and whole language approach. Integrated method (methods). Explanation of main points.	Directs teachers to practice the method at home.
10	Practice of Method C teaching phonics approach and whole language approach (Integrated Method).	Encourages other teachers to critique each presenter.

TREATMENT SCHEDULE

Groups	Week 1	Week 2-3	Week 4-5	Week 6	Week 7-8	Week 9-10	Week 11-12	Week 13	Week 14-15
	General Introduction	2 lessons	2 lessons	Revision	2 lessons	2 lessons	2 lessons	Revision	Posttest
TREATMENT CONDITIONS									
A Phonics approach	Introduction to exercise for awareness and arouse interest	2 reading items	2 reading items	Revision of items taught	2 reading items	2 reading items.	2 reading items	Revision of items taught	Posttest
B Whole language approach	Introduction to exercise for awareness and arouse interest	2 reading items	2 reading items	Revision of items taught	2 reading items	2 reading items	2 reading items	Revision of items taught	Posttest
C Integrated method (A & B) combined	Introduction to exercise for awareness and arouse interest	2 reading items	2 reading items	Revision of items taught	2 reading items	2 reading items	2 reading items	Revision of items taught	Posttest

INSTRUCTIONAL STRATEGY FOR BEGINNING READING SKILLS

S/NO	PHONICS APPROACH	WHOLE LANGUAGE APPROACH
1.	Attention on the sounds of spoken words	Knowing about prints and books
2.	Learning about letters of the alphabet	Understanding prints and books
3.	Encouraging children to spell and write	Reading of prints in books
4.	Teaching about the alphabet in print	Building comprehension
5.	Teaching the sounds of spoken language	Encouraging reading and writing
6.	The consonant blends	Building word knowledge and comprehension
7.	Words that rhyme	Reading for meaning
8.	Building of words with word parts	Reading with meaning
9.	Two letters but one sound (digraph)	Understanding meaning in why? When? Which?
10.	Identifying digraphs in sentences	Using clues to find the meaning
11.	Knowing the "th" sound	Word attack (long and short vowels)
12.	Knowing about letters but no sounds	Word attack (root words)