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Syntactic awareness and reading development: A training study with young children

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SYNTACTIC AWARENESS AND READING DEVELOPMENT
A TRAINING STUDY WITH YOUNG CHILDREN

By

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ABSTRACT

A number of previous research studies have examined the relationship between syntactic awareness and reading, but few training studies have been reported. In the present study, a 10-week training study employing an experimental design, was conducted with 34 Year 1 and 38 Year 2 children to determine whether training in syntactic awareness increased levels of syntactic awareness and reading performance. Prior to the commencement of training, all children were pretested in syntactic awareness as measured by an oral correction task, and in reading. On the basis of these tests, matched pairs of subjects were assigned to experimental and control groups at each Year level. At the conclusion of the training period all subjects were posttested in alternate forms of the same tests used at pretest.

The results showed that there were no significant differences between the experimental and control groups, of either grade, at posttest, in syntactic awareness and reading performance. A significant main effect for grade was recorded in the syntactic awareness task, with the Year 2 children performing at a higher level than the Year 1 children. When pretest and posttest scores in syntactic awareness and reading performance were compared, all children, whether they received training or not, improved significantly in their levels of syntactic awareness and also their levels of reading performance.

It is suggested that the improvement in syntactic awareness across all groups may have reflected the influence of the particular curriculum documents used in Western Australian schools. It is further suggested that more training studies are needed to examine the effects which different language curricula may have on the development of syntactic awareness in early readers.

DECLARATION

"I certify that this thesis does not incorporate without acknowledgement any material previously submitted for a degree or diploma in any institution of higher education; and that to the best of my knowledge and belief it does not contain any material previously published or written by another person except where due reference is made in this text."

Signature. [redacted]

Date. . . . . 18.4.1994 . . . . . .

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CHAPTER 1
INTRODUCTION

This research study examines the role that syntactic awareness plays in the reading performance of young children who are early readers. It is a training study, with children in their first and second years at school, which employs experimental and control groups at each year level. At the conclusion of the training period, the groups are compared to ascertain whether there are differences between them in levels of syntactic awareness and reading performance.

1.1 BACKGROUND TO THE STUDY

Reading occupies a major role in any definition of literacy. The ability to read is a life long skill which is a significant contributor to the quality of life for many people. It is little wonder, then, that the question of why some people acquire this skill easily and others do not has puzzled researchers for decades. In the introduction to her book, The Great Debate, Jeanne Chall (1967) remarked that ". . reading has been the most researched of the school subjects" (p.1). More than two decades later, not very much has changed. Educational journals which abound with research studies concerned with reading models, methodology, strategies and classroom practice, point to the fact that it is still one of the most dominant issues in education. This is particularly true of instruction in beginning reading. Its unique importance is reflected by Adams' (1990) statement that early reading success ". . . is the key to education, and education is the key to success for both individuals and a democracy."(p.13)

The concerns of academics and practitioners are reflected in the wider society. Across many countries of the world, researchers have sought a solution to why learning to read is a far more difficult endeavour for some children than for others. Most parents have readily observed the facility with which their young children acquire and reproduce the intricacies of spoken language. It is no coincidence that some of the research into reading has begun by examining the links between spoken language and print (Cazden, 1972; Ehri, 1979). There is an implied assumption in such research that, in order to read effectively, children must be able to apply what they already know about spoken language to its written form. However, there are many aspects of print which are quite specific and are different from speech (Graddol, Cheshire & Swan, 1987; Perfetti, 1985).

In spoken language, the primary focus is on making meaning; we speak in order to communicate. With print, ease of communication is not so simple. The reader also requires a knowledge of the structure of language; the letters, words, phrases and sentences which are used to convey its meaning. The past decade has seen an enormous amount of interest by researchers into the part that phonological awareness plays in beginning reading (Bryant & Bradley, 1985; Mann, 1993; MacLean, Bryant & Bradley, 1987; Tunmer & Nesdale, 1985). The evidence from these studies is overwhelmingly in support of the claim that it is a crucial factor in the success of early readers. The part that syntactic knowledge and understanding play in the reading process, however, is much less clear.

On the face of it, understanding syntax would seem crucial to the reading process since the structure of print is largely determined by the structure of syntax. Words, and groups of words, are ordered in particular ways according

to the conventions of the language they represent. These conventions are understood by successful readers, and it is this understanding which allows them to interpret the intention of the writer as it is expressed through the order and arrangement of words and sentences.

1.2 AIMS OF THE STUDY

This study seeks to examine the contribution which training in syntactic awareness makes to the process of early reading. Since the responsibility for teaching reading is usually placed on the school, the school environment is the setting chosen for this research. Its focus is children who have already commenced the formal processes of learning to read within a classroom situation and its researchers are the classroom teachers themselves. The validity of the teacher as researcher is widely acknowledged (Bissex & Bullock, 1987; Goswami & Stillman, 1987; Kutz, 1992). The position of the teacher as the vehicle through which many research findings are implemented is also acknowledged. Ken Goodman (1992) notes that, "No research study, no brilliant discovery, no book, no seminal article, no journal, no program, no policy, no mandate, no law can change what happens to kids in our schools. Only teachers can do that" (p.189).

Although a number of studies have examined syntactic awareness and its relationship to reading (Bentin, Deutsch & Liberman, 1990; Blackmore, 1991; Bowey, 1986; Milton, 1990; Tunmer, Herriman & Nesdale 1988; Tunmer, Nesdale & Wright, 1987), there are very few training studies to support the findings of those correlational studies which have shown that a relationship exists between syntactic awareness and reading. While this study is a training study with an experimental design, it is carried out in an ordinary primary school

using existing classes of children and widely used curriculum documents. The training is undertaken with children in their first and second years at school.

1.3 DEFINITION OF TERMS

The terms 'grammar' and 'syntax' are frequently used interchangeably in research literature. For the purposes of this study, the term 'syntax' is the preferred choice. Emmitt & Pollock (1991) state that, "The term 'grammar' as it is used by linguists today, refers to that body of rules that describes or explains how a language operates " (p.101). They define syntax as "The arrangements and interrelationships of words, phrases, clauses and sentences" (p.192). The understanding of what is meant by syntactic awareness contains elements of both of these definitions. Bowey (1988) defines syntactic awareness as ". . . the ability to reflect on and manipulate grammatical structure" (p.5). Similarly, Tunmer and Hoover (1992) state that "syntactic awareness is the ability to reflect on and manipulate aspects of the internal grammatical structure of sentences" (p.35).

1.4 OUTLINE OF THE STUDY

Chapter 2 contains a review of the current literature in the area of syntactic awareness, including training studies. Theoretical models of reading and their influence on current Western Australian curriculum documents are also examined. In Chapter 3, the design of the study and the methodological considerations are outlined and discussed. The results are presented in Chapter 4 and discussed in relation to the existing research in Chapter 5. Finally, Chapter 6 outlines possible implications for classroom practice and future research.

CHAPTER 2
LITERATURE REVIEW

This chapter presents a review of the major research findings concerning syntactic awareness and its relationship to early reading. It summarises the existing research in the area and critically evaluates its relevance and application to the present study. The first part of the discussion examines theoretical models of reading and their place in the methodology of the curriculum documents used in Western Australian schools. In addition, the role of metalinguistic ability is considered with a view to its significance in the acquisition of reading. The place of syntactic awareness in the process of reading and the teaching of syntax in relevant curriculum documents are considered. Finally, the review examines research studies in the area of syntactic awareness and reading acquisition with a particular focus on training studies undertaken in this area.

2.1 THEORIES OF READING

Jeanne Chall's (1967) book Learning to Read: The Great Debate has been the catalyst for much of the discussion, which has taken place over the past two decades, on the way in which children learn, and are taught, to read. Chall's concerns focused upon which methods of teaching reading to children in their first years at school were likely to meet with the greatest success. The debate centred around two types of reading programmes, those which were code-oriented and those which were meaning-oriented. After a meticulous examination of the available research evidence, Chall concluded that beginning

reading programmes which emphasised decoding were likely to produce better results than those which emphasised meaning without decoding. Although the definition of what is meant by a 'code-emphasis' or 'phonics' approach has changed somewhat since 1967, essentially the research findings which show the importance of phonological awareness in early reading (Bradley & Bryant, 1985; Tunmer & Nesdale,1985; Vellutino & Scanlon, 1987) tend to confirm Chall's conclusions, as did her own update of the research findings 15 years later (Chall,1983). At that time she commented that:

> With regard to the phonics issue, it appears as if the research in the 1970s continues to support beginning programmes that are code-oriented as compared to those that are meaning-oriented. Indeed, the research support seems to be even stronger than it was in 1967 (p.43).

More recently,the focus of the reading debate has shifted somewhat from code-emphasis versus meaning-emphasis programmes, towards a consideration of the merits of three models of the reading process: 'top down', 'bottom up', and 'interactive'. The top- down models (Goodman, 1967; 1973; Smith, 1972; 1978) relate closely to the meaning- emphasis programmes, while the bottom- up models (Gough, 1976; La Berge & Samuels, 1976; Perfetti, 1985) are allied to the code- emphasis programmes. The interactive models (Rumelhart, 1977; Just & Carpenter, 1987) contain elements of both of the previous models. In addition, there are the 'developmental' models of reading (Chall,1983a ; Doehring & Aulls, 1979) which tend to incorporate much of the philosophy of the interactive models with a belief that the requirements of readers do not remain static, but change during their various stages of

development.

Top down reading models (Goodman, 1967, 1973; Smith, 1972, 1978), operate from a meaning- based position in which readers are said to sample the text, and from this sampling use their own abilities, gained from personal experiences, to predict the content of the writer's message. Smith (1978) notes that, "'Prediction is asking questions and comprehension is getting those questions answered" (p.85). In this model, the meaning which is extracted from text relies as much on the non-visual information which the reader brings to the text, as it does on the visual message contained on the printed page. Goodman (1973) comments that, "Receptive language processes are cycles of sampling, predicting, testing and confirming. The language user relies on strategies which yield the most reliable prediction with the minimum use of information available" (p. 23).

In this view of reading, fluent readers skim the text without needing to process every word in order to make hypotheses, or guesses, about likely outcomes. Thus, skilled, fluent readers rely more on context than on the processing of individual words. Conversely, poor readers through their over reliance on recognition of individual words, are not able to predict, or guess effectively and so lose meaning. This view of reading is largely semantically based, although it acknowledges the role of the syntactic and grapho-phonic cueing systems. However, it also assumes that by focusing on meaning, the reader will learn syntactic and phonological skills incidentally without the need for explicit instruction. Top- down reading models have generated large numbers of dedicated followers who have seen the theoretical framework translated into extremely attractive classroom materials. Adams (1990) comments upon its popularity by noting:

> This is an enormously appealing hypothesis. Not only would it seem to explain the remarkable speed and ease with which skilful readers process text, but the premise on which it does so is also compelling: Skilled readers' attention is directed to and by the meaning of text. (p.99)

A number of recent studies have questioned some of the tenets of the top-down reading models. Nicholson's (1991) study, for example, replicated Goodman's (1967) earlier study and reported that some of Goodman's conclusions were optimistic regarding the role that context plays in fluent reading. Nicholson notes that it is more likely to be poor or average readers who read better in context, while good readers are less likely to need context cues. Evidence from other studies suggests that skilled readers do not necessarily engage in the prediction tasks which Smith and Goodman describe (Gough, 1983). Furthermore, studies which have measured eye fixations across text (Carpenter & Just, 1981; Just & Carpenter,1987) indicate that rather than skimming and sampling text, skilled readers are more likely to fixate each word. Differences in eye fixations tend to have more to do with the number of letters in a word than the function of the word within the text.

Bottom-up reading models (Gough, 1976; LaBerge & Samuels, 1976) are essentially linear and hierarchical. The reader must process information at one level before moving on to other levels. These models imply the existence of lower level and higher level skills in the reading process. The lower order skills include the visual processing of text such as the analysis of visual information in the form of individual letter recognition, letter clusters and words. The next level includes the analysis of the syntactic information of the text such as the identification of word strings, word order and placement. Finally, the semantic

analysis, or extraction of the meaning of the text, is achieved.

This final, higher order processing skill does not operate independently, but is dependent on the other levels of processing which have preceded it. Thus, bottom-up models of reading stress the interdependence and logical order of specific processes which lead to the eventual goal of understanding text. These models of reading have tended to become identified with a phonic- based approach to the teaching of reading since, essentially, they view the reading process as starting with the alphabet and proceeding from that to words, sentences and paragraphs. Gough's (1976) reading model, for example, proposes that beginning readers use a mapping system where they begin by mapping graphemes and systematic phonemes. This central place of phonological knowledge in the process of reading is rejected by many followers of top-down reading models. Smith (1992) states that, "There is no compelling evidence that teaching children phonics makes them readers - and no reason to believe that it could do so" (p.438).

In their bottom-up model of reading, LaBerge and Samuels (1976) claim that fluent reading is a combination of many component processes. In early literacy, the progression through the various stages may be slow while accuracy of word recognition is learned, but eventually each separate process becomes automatic. When this occurs, the reader moves so quickly through each process, that he is unaware of having done so. LaBerge and Samuels believe that this process of automaticity proceeds from recognising visual cues such as letters, to the phonological cues of sounding and blending and then to the the higher order skills of syntactic and semantic processing. The bulk of readers' attention is directed towards these higher order skills because, through practice, they are able to move through the other skills swiftly and automatically.

LaBerge and Samuels explain their model thus:

> If each component process requires attention, performance of the complex skill will be impossible, because the capacity of attention will be exceeded. But if enough of the components and their coordinations can be processed automatically, then the load on attention will be within tolerable limits and the skill can be successfully performed (p.548).

The main difficulty with this model of reading is that it seems not to account for the fact that it is possible to read complex text without actually reaching a level of understanding or being able to extract meaning from print (Lipson & Wixson, 1991). In an update of his earlier model, Gough (1985) acknowledges that skilled readers appear to have direct visual access to high frequency words without the need for phonological recoding, but the majority of words in text which do not fall into this category are still accessed by this method.

A further body of research has produced models of reading which are neither exclusively top-down nor bottom-up in their theoretical base, but rather combine elements of both. The proponents of these models assert that effective reading is a combination of both higher and lower order processes, the use of which depends upon the way in which the reader interacts with the text. For this reason, they are known as interactive models.

Rumelhart's (1977) model of reading as an interactive process, explains how readers rely on a variety of informational sources as they process text and employ both higher and lower order processing skills as needed (see also Adams, 1990; Adams & Bruck, 1993). For example, a reader's understanding of a word may depend not only upon knowledge of phonological recoding, but also

upon the syntactic or semantic content in which the word is embedded. Thus, prior knowledge, in the form of expectations about likely letter patterns and word placement, is used by fluent readers throughout the comprehension process.

Just and Carpenter (1987) in their interactive model of reading comprehension point to the likelihood of experienced readers being able to execute a variety of processes simultaneously as they extract meaning from print. As the reader gains practice, many of the perceptual, lexical, syntactic and semantic processes which are required for comprehension, become automatic and are not consciously invoked by the reader.

This interaction with the text does not necessarily involve following an hierarchical order of skills, but rather requires using whatever skills are necessary at any particular time. The model does suggest, however, that the needs of all readers are not always the same and that reading instruction will require different emphases at different times of reading development. The requirements for beginning readers, for example, are not the same as those for high school students. Most interactive models of reading suggest that a knowledge of the coding system is crucial for beginning readers (Just & Carpenter, 1987; Ruddell & Speaker, 1985; Rumelhart, 1977; Rumelhart & McClelland, 1981). When phonological coding becomes automatic then working memory is freed to process the meaning of print. Conversely, when decoding is not automatic, then the resources of working memory are stretched and the reader loses meaning (Perfetti & Lesgold,1979). Perfetti (1985) notes that:

> A child who learns the code has knowledge that can enable him to read no matter how the semantic, syntactic and pragmatic cues might conspire against him. No matter how helpful they are to reading, these cues are not

really a substitute for the ability to identify a word. (p.239)

Closely allied to the interactive models of reading are developmental models (Chall,1983a; Doehring & Aulls,1979). Whilst acknowledging that different processes interact with one another in the comprehension of text, the proponents of developmental reading models also claim that as children pass through the various stages of reading development, they interact not only with the text, but also with other factors such as their environment, school, home and community. Chall (1983a, p.11) draws the parallel between the stages of reading development and Piaget's stages of cognitive development, in that reading stages also have a definite structure, where one stage builds on the skills of another, usually following an hierarchical progression.

Her developmental model of reading states that readers move through six stages in their quest to become skilled and efficient at the task. The first stage, Stage 0, is a pre-reading stage where the development of the child, from birth to age 6, in the various aspects of language knowledge and understanding is deemed to be a significant contributor to success in reading at school. In Stages 1 and 2 the child essentially masters the decoding system, while in Stages 3 and 4 there is a growing need to make use of syntactic and semantic information as the reader moves into the area of relating print to ideas and dealing with multiple viewpoints. Stage 5 is that of the adult, or independent reader, which Chall refers to as the stage of 'construction and reconstruction.' Mature readers use print to re-affirm what they already know and to construct their own knowledge according to their purpose and intent. This developmental model of reading presupposes that in order to reach this maturity as a reader, it is necessary for each stage of reading development to build upon the stage

which has gone before it. In this way, it is allied to the philosophy of bottom-up models.

Similarly, Doehring and Aulls (1979) describe four main stages of reading development ; pre-reading, beginning reading, transitional reading and proficient reading. As readers move through these stages, there is an interaction with other variables such as cognitive skills, reading skills, instructional techniques and cultural variables (p.40).

All models of reading appear to acknowledge the presence of the three cueing systems, grapho-phonic, syntactic and semantic. The differences between the models occur in the emphasis which is given to each cueing system in the reading process and the manner in which each is utilised by the reader. Top-down models assign more importance to the syntactic and semantic systems, with the grapho-phonic system invoked only when needed by the reader. Bottom-up models suggest that the reader uses each system in an hierarchical fashion, beginning with the grapho-phonic system and then moving to the syntactic level before the final processing of meaning at the semantic level. Interactive and developmental models suggest that, while all three cueing systems are used by readers as they process text, the importance of each one is related to individual stages of reading development and the manner in which individuals interact with the text.

Over time, all these theoretical models of reading have exerted considerable influence upon classroom practice. Some models have become more favoured than others, and have received wider coverage in the curriculum documents followed by teachers and thus are reflected in the reading strategies which form the basis of classroom instruction.

2.2 THE INFLUENCE OF READING MODELS

In Western Australia, as elsewhere, research findings in the area of reading are reflected in the content and philosophy of the curriculum documents provided by the Ministry of Education for the use of teachers in the preparation of lessons. While these documents are not prescriptive in the sense that teachers are expected to follow them slavishly, they nevertheless, form the basis, in practice, for most of the instructional strategies which teachers employ within their classrooms. In this way, their influence is considerable. It seems logical to suppose that theoretical models of reading must necessarily translate into classroom practice. However, the nature of curriculum documents is to direct the programmes of teachers by specifying what needs to be taught. Most documents contain a certain philosophy or perspective but this may not be the same as a theoretical base. Some documents, for example, may contain evidence from several research paradigms, while others may reflect a more particular allegiance. The main curriculum documents used in the teaching of reading at primary school level in Western Australia are Reading K-7 Teachers Notes (1983), English Language K-7 Syllabus (1989) and the various modules of the First Steps (1992) Language Development Programme.

The philosophy and strategies contained within the Reading K-7 Teachers Notes (1983) are clearly influenced by top-down reading models. The sentence 'Reading is Concerned with Making Meaning' is repeated constantly throughout the text to remind teachers of this fundamental purpose in their teaching. It is clearly noted that reading is a combination of visual and non-visual information, of which the latter is the more important, "The more non-visual information readers can use the less they are dependent upon analysing all visual information available in the print, i.e. the more one knows about the content, the

less one depends upon the print" (p.6). In addition, it is noted that, "Efficient readers use the fewest cues possible to make a prediction and test their guess against their developing meaning" (p.6). This is clearly a reference to the Smith and Goodman models of prediction and confirmation. The activities and strategies for teachers to follow emphasise this meaning-centred approach. Four instructional approaches to reading are presented in the document: Basal Series; Individual Reading; Language Experience; and Eclectic. It is stated that, "In an Eclectic Approach, the best aspects from many approaches are incorporated by a particular teacher to suit a particular group of learners at a particular time" (p.17).

The list of references contained within this document clearly reflects its theoretical position in spite of some contradictory statements within the text itself. While there are some references pertinent to reading activities (Pearson & Johnson, 1972; Pulvercraft, 1978; Ruddell,1973; Spache, 1966) there are a number of others clearly allied to top-down reading models (Clark,1976; Clay, 1972; Holdaway, 1979, 1980; Latham & Sloan, 1979; Sloan & Latham, 1981; Smith, 1972, 1975). Activities and strategies to develop all three cueing systems are provided, although the bulk of the activities are clearly weighted towards semantic processes. The form of the document is very general. Whilst it provides a multitude of activities and suggestions, it is left to the discretion of teachers to select those which they believe to be most suitable for particular year levels.

The publication of the English Language K-7 Syllabus (1989) 6 years later reflected the direction which research studies in reading and language had taken since the publication of the Reading K-7 Teachers Notes in 1983. A body of research literature had demonstrated the links between phonological

awareness and reading and this was acknowledged, but not emphasised, in the new document. The focus moved from reading in isolation, to reading as one component of integrated language learning in conjunction with speaking, listening and writing. The rationale behind this approach to language learning is that each of the four processes is intrinsically related to the others in such a way, that to isolate one from the context of the others would be to deny the social reality of language. This relates to the philosophy of the Whole Language approach to learning (Goodman,1986; Weaver, 1988, 1990) which in turn incorporates a top-down view of reading. Weaver (1990), in an explanation of what is meant by Whole Language, says that, " Literacy skills and strategies are developed in the context of whole, authentic literacy events, while reading and writing experiences permeate the whole curriculum" (p.6).

Like the Reading K-7 Teachers Notes, this document is also meaning centred. The introduction emphasises that "Language is used to exchange and negotiate meaning" (p.5). Meaning, in this document, is gained through the interaction of context, text and process. Context refers to a range of physical and social factors such as purpose, audience, content and background. Text refers to spoken and written communication, and contains language conventions, syntax, phonology and grapho-phonics as well as the different features that characterise spoken and written language. Process refers to the thinking strategies utilised when language users compose and comprehend. Thus, process in this context, is an active reflection by the user of the planning strategies which may need to be employed and a consideration of the success or failure of their use.

The English Language K-7 Syllabus contains detailed focus points to provide teachers with the opportunity to follow a cohesive programme of teaching

strategies which recognises the complexity of language in a range of contexts. In this sense, it is eclectic in its outlook. However, while some explicit teaching of syntax and grapho-phonics is recommended, there is still a view that much of this information will be learned implicitly as children become more competent language users. In this way, this document, too, reflects the influence of top-down reading models and Whole Language learning. The proponents of top down theory are represented in the reference list (Clay,1979; Holdaway, 1979) as they were in the earlier document.

The First Steps (1992) Language Development Programme incorporates much of the philosophy and strategies of the English Language K-7 Syllabus, but places more emphasis on individual development by providing indicators of growth in language development. It adheres to the same four interrelated components of language but places them into four separate developmental continua: First Steps Reading Developmental Continuum (1992), First Steps Writing Developmental Continuum (1992), First Steps Spelling Developmental Continuum (1992) and First Steps Oral Language Continuum (1992). Each continuum traces the individual development of a child by describing a number of indicators, or phases, which provide teachers with a way of mapping children's progress. In reading, for example, the path from non-reader to adult reader necessitates passing through the stages of role play reading, experimental reading, early reading, transitional reading, independent reading and advanced reading. It is expected that children will move through these developmental stages at their own rate. Each stage is characterised by a set of behaviours, or indicators which chart the developmental steps a reader needs to display at each particular level. For each stage there are detailed teaching strategies to support and encourage the reader. Implicit in this notion of

developmental learning is the belief that, for most children, such development follows a predictable course, although there will be variations from child to child. These stages of development closely parallel those nominated by Chall (1983) in her developmental model.

The Reading Developmental Continuum (1992), in a statement common to all the continua, states that, "Just as milestones or 'indicators' of physical growth can be charted, so too can indicators of language and literacy development" (p.iv). The First Steps philosophy complements the English Language K-7 Syllabus in that it treats language not as a collection of separate categories, but as interrrelated components, although for teaching purposes specific aspects of language may need to be considered individually. First Steps proposes a number of beliefs about what is meant by 'meaning.' Its central purpose refers to the meaning of print which involves the integration of the cueing systems of language (p.vii). All reading strategies must be considered within the meaningful context of print and not in isolation, removed from their language referent.

As this document extends and complements the English Language K-7 Syllabus, it reinforces the philosophy and principles of integrated learning including Whole Language. Whole to part learning is emphasised along with language in a social context based on children's own experiences. Part of the First Steps reading philosophy states that, " First Steps is based on holistic beliefs about language and literacy learning " (p.iii). The bibliography of the Reading Continuum reflects this holistic influence (Cambourne,1988; Holdaway,1972; Sloan & Latham, 1981; Weaver, 1988) as well as the developmental influence (Chall,1983a).

All Western Australian curriculum documents concerned with the teaching of reading during the past decade, have reflected the influences of theoretical models of reading. These influences have directed much of the teaching methodology used in schools. Top-down models have been widely represented and their influence is still significant in the most recent documents. Bottom-up models which emphasise coding have not been represented in recent times. Interactive reading models, also, have received little acknowledgement although they have, perhaps, assisted in the widespread recognition of the relationships of the three cueing systems in language learning. The most recent documents have shifted the 'meaning' emphasis of the top-down models to encompass a somewhat broader definition. The concept of meaning refers not only to prediction and non-visual processing, but also to a belief that meaning is centred within the reader. A skilled reader requires expertise in all three cueing systems in order to effectively extract this meaning. In all, the top-down reading models have probably exercised the single most significant influence on reading curricula in Western Australia during the past decade and up to the present time.

2.3 METALINGUISTIC ABILITIES AND READING

While reading models may direct the type of teaching which is given to beginning readers, adherence to a particular philosophy or methodology is not sufficient, in itself, to guarantee reading success for all children. There are significant numbers of children who, even when exposed to consistent and careful instruction, are able to achieve only limited success in reading. Thus, other factors, apart from methodology, must account for this failure. One of these may be the difficulty of coping with the decontextualised nature of print (Perfetti, 1985; Tunmer, 1989). The pre-school experiences of young children in

spoken language almost always take place in a meaningful social context accompanied by prosodic cues. The demands of print, on the other hand, require young children to transfer their knowledge of language from this supportive environment to the contemplation of a far more abstract condition.

A second factor is that in order to meet successfully the challenges imposed by the abstract nature of print, children must be able to separate language from its social context and to reflect on the nature and properties of language itself. This awareness of language as an object unto itself has been termed 'metalinguistic' ability (Cazden. 1972; 1983; Grieve, Tunmer & Pratt, 1983). Cazden (1983) notes that :

> Metalinguistic awareness, the ability to make language forms opaque and attend to them in and for themselves, is a special kind of language performance which makes special cognitive demands, and seems to be less easily and less universally acquired than the language performances of speaking and listening (p. 303).

Tunmer (1989) defines metalinguistic awareness as, " the ability to use control processing to perform mental operations on the products of the mental mechanisms used in sentence comprehension (i.e., the phonemes, words, sentences and sets of interrelated propositions)" (p. 102).

One view of metalinguistic development is that such skills emerge in early childhood and develop concurrently with other language processes (Smith & Tager-Flusberg,1982). Studies have shown that even very young children can

spontaneously correct errors and make judgements about spoken language use (Chaney,1992; Clark,1976; Gleitman, Gleitman & Shipley, 1972).

An alternative view is that the development of metalinguistic awareness is most likely to occur during middle childhood, at about the same time that formal schooling begins (Herriman, 1986; 1991; Tunmer, 1989; Tunmer, Herriman & Nesdale, 1988; Tunmer, Nesdale & Wright, 1987). In this view, metalinguistic awareness is a conscious rather than an automatic process and requires the deliberate decision to focus on the form of language rather than its meaning. Bowey (1988) believes that it is this notion of conscious control which separates the metalinguistic development of younger and older children. She states, "We have seen that there is clear evidence that children can reflect on language structures at an early age. What emerges in middle childhood is the ability to control that aspect of linguistic functioning" (p.19).

Other researchers view the development of metalinguistic awareness differently. Bialystok (in press) poses the view that metalinguistic awareness is a continuation of normal, existing processes of language development. She suggests that language proficiency requires two independent processing components : analysis of representational structures and control of language processing. These two components are part of normal language proficiency and are present in normal language use and understanding. Metalinguistic operations require these two processing components to operate at a higher and more sophisticated level than that which is required for normal language use. In this way, metalinguistic awareness is not a new, or different, processing component which occurs at a certain developmental point, but rather is an extension of language processes which are already present.

Karmiloff-Smith (1986) explains the development of metalinguistic ability as a three-phase model of representational change. The child must pass through each phase of development in order to acquire a particular linguistic form. In the first phase, the child's representation of a particular form develops on the basis of feedback from external stimuli (the adult model). At this stage, the child stores each representation separately from every other representation. By the end of this phase, there is a match between the output of the child and the output of the adult, so that the child achieves an adequate communicative level in the particular linguistic form.

In the second phase, the child concentrates on the internal organisation of the representations which were previously stored independently. Correctness of form is not important in this phase, and the external stimuli are largely ignored. Karmiloff-Smith notes that the internal operations involved at this stage are automatic, rather than conscious, and so cannot be considered metalinguistic in nature.

By the time the third phase is reached, the child's development in a particular linguistic form is influenced by both external stimuli and the child's own representational system. It is only after the child has completed the three-phase cycle that the representational aspects of the linguistic form can be contemplated at a conscious level, and this is the commencement of metalinguistic awareness. Karmiloff-Smith's representational model appears to suggest that even when 3 and 4-year-old children make correct judgements about linguistic forms, they may not necessarily be metalinguistically aware.

A large part of the research interest in metalinguistic awareness has

focused upon the metalinguistic development of children in the 5-to 8-year-old age group, and its relationship to the process of learning to read (Blackmore, 1991; Dreher & Zenge, 1990; Mattingly, 1884; Ryan & Ledger, 1984; Scholl & Ryan, 1980). In this context, four broad categories of metalinguistic awareness have emerged as important for the reading process: phonological awareness, word awareness, syntactic awareness and pragmatic awareness. Phonological awareness refers to the abillty to understand and manipulate the phonemes within words. Word awareness refers to an understanding of words as units of language. Syntactic awareness refers to an understanding of the structure and form of a language, and pragmatic awareness refers to an understanding of the relationships which exist between sentences and their surrounding context. Each of these different aspects of metalinguistic awareness requires the child to see language as an object of thought and to be able to reflect, if necessary, on each separate structure apart from the meaning conveyed by the language itself. The way in which each aspect of metalinguistic skill may be employed in the reading process is summarised by Adams (1990) :

> The basic perceptual data in reading are individual letters. Yet the meaning of text is several steps removed from its letter by letter composition. In order to make sense of the letters, the reader must collect them into words. But this is not enough either. In language the meanings of words are carefully interrelated through syntax and collected into sentences or basic idea units. In turn, the sentences are ordered so as to convey the larger message of the writer. (p.414)

While the contribution of all aspects of metalinguistic skill may be crucial to the mastery of print, the part that the acquisition and application of syntactic awareness play in the reading process may be especially important. Tunmer (1990) defines syntactic awareness as "the ability to reflect on and manipulate aspects of the internal grammatical structures of sentences" (p.99).

2.4 SYNTACTIC AWARENESS AND READING

There is widespread acceptance of the importance of the three cueing systems, grapho-phonic, syntactic and semantic, in determining the ability of early readers to process text successfully. General agreement on the relative importance of each individual system, however, is more difficult to find. In English, the structure of print is largely defined by the conventions of syntax. Just and Carpenter (1987) illustrate this point with the comparison of two sentences where the simple re-ordering of one function word can completely change the reader's interpretation of its meaning:

They fed her dog the biscuits.
They fed her the dog biscuits. (p.133)

It is clear that some forms of syntax are difficult (Adams,1980; Crain & Shankweiler,1988; Ryan & Ledger, 1984). What is less clear, however, is how syntactic knowledge, or lack of it, can influence a young reader's text comprehension. The facility with which young children are able to reproduce complicated, syntactic patterns in speech, has perhaps led us to assume that it should be relatively easy to transfer this expertise to print.

The interpretation of speech is almost invariably accompanied by a number of contextual cues such as tone, gesture, inflexion and emphasis, all of which assist interpretation. The reader, however, has none of these overt cues to follow, but must interpret the writer's message solely on his, or her, own understanding of how print is organised and structured. Huggins and Adams (1980) note that:

> In spoken language, the prosodic pattern of what is said (pitch,stress, timing and pauses) contains many clues about how spoken words should be grouped and how the resulting groups of words are related. In written language, this information is not explicit, except minimally as punctuation (p.88).

For the beginning reader, particularly, the demands which reading makes appear to be greater than those required for oral communication. The development of syntactic abilities may be crucial to the reader's ability to deal with the more abstract field of print. There are certain levels of syntactic understanding which the reader needs to acquire in order to process print successfully. The ability to recognise words in print is itself not sufficient. The reader must also recognise both the way in which words are interrelated in context and the function of individual words within a string of words (Adams,1980; Huggins & Adams,1980; Perfetti,1985; Tunmer & Grieve, 1983). In addition, the reader must recognise the punctuation markers through which both the semantic and syntactic boundaries of text are often organised. The pauses, stops and capitalisation of print provide similar cues to meaning for the fluent reader that pause, gesture and inflexion carry for speech. Nevertheless,

reading is a difficult skill for children to master. A major concern for teachers of beginning readers is that experience has often shown that children who experience difficulties with reading in their first year at school may not necessarily improve as they grow older (Juel, 1988; Stanovich, 1986). It seems therefore, that understanding the contribution which syntactic awareness makes to the reading process could be helpful in assisting such children.

The manner in which words are interrelated is largely determined by syntax. Although word recognition appears to be an essential part of comprehension, it is the way in which individual words are ordered in phrase and sentence units which forms the basis of discourse. Just and Carpenter (1987) note that skilled readers use syntactic cues as they interpret text. These cues are processed according to the reader's own understanding of the structure of language. Certain expectations about the order and nature of syntax assist in this interpretation. The most likely syntactic cues which are followed by a reader as text is processed are word order, word class, word function, affixes, word meanings and punctuation. This suggests that in order for beginning readers to interpret text successfully, they must also be able to recognise the syntactic cues. Huggins and Adams (1980) clarify this point by noting :

> There are several aspects of syntax that children must acquire. First they must learn how single words are combined to form larger syntactic units, such as a noun and a verb to make a noun phrase. Then they must learn simple syntactic rules, such as those used to generate the passive or the negative, which modify the order of the constituents or introduce auxiliary verbs or function words where necessary. Later still, they must learn how single syntactic rules are combined to generate complex sentences. (p.88)

Shankweiler and Crain (1986) have suggested that reading requires two levels of processing; firstly, identifying the individual words and secondly, processing sentences and higher-order units of text. Similarly, Crain and Shankweiler (1988) have hypothesised that language acquisition proceeds in a stepwise direction beginning with the simplest structures and moving on to those of greatest difficulty. The comprehension of text requires the child to focus on syntactic structures, some of which may be very complicated. In this way, the process of reading may demand from beginning readers more linguistic skill than they may possess at a particular stage. Such linguistic skill may also be related to maturation. In their study of the development of grammatical sensitivity in first, second and third grade children, Willows and Ryan (1986) indicated that there was clear evidence to support the view that such sensitivity develops along with the age of the child. They noted that :

> Despite apparently mature oral language, some children in the early school grades may be relatively insensitive to subtler aspects of semantic and syntactic redundancy in language. Thus, in their attempts to "figure out" words in text when they fail to recognise them "by sight", some children may be able to use effectively the grammatical cues in the text (p.263).

Other researchers believe that syntactic awareness may contribute to reading development by assisting phonological recoding skill (Tunmer, 1990; Tunmer, Herriman & Nesdale, 1988), and by helping readers to monitor their on-going comprehension more effectively (Bowey, 1986a; Tunmer, 1989; Tunmer, Nesdale & Wright, 1987). As children learn to recode unfamiliar words in text,

their developing knowledge of syntax may assist them in the use of contextual cues, in conjunction with their developing phonological understanding.

In addition to assisting phonological recoding skill, syntactic awareness may also assist beginning readers with their comprehension monitoring. Some research studies have shown that good readers are more likely than poor readers to self-correct reading errors when such errors change the surrounding semantic or syntactic context (Beebe, 1980; Weber, 1970; Paris & Myers, 1981). Poor readers tend not to register that their error clearly does not fit the context, or if they do recognise the error they are unable to employ the strategies necessary to correct it. Tunmer et al (1987) suggest that syntactically aware children are able to monitor their on-going comprehension and "check that their responses to the words of the text conform to the surrounding grammatical context" (p.26).

The contribution which syntactic awareness makes to the reading process itself is open to question and interpretation. Since print is structured in syntactic units, it seems logical to assume that those children who have developed an understanding of this structure will more easily cope with the task of reading than those who have not. In order to assist those children with poorly developed syntactic understanding, it is necessary to be able to assess the level of this understanding in some definitive way.

2.5 METHODS OF TESTING SYNTACTIC AWARENESS

The ways in which the syntactic abilities of readers have been measured by various research studies have tended to concentrate on three main types of task; sentence judgement, oral cloze and sentence correction.

Sentence judgement tasks have generally required children to distinguish between grammatically correct and grammatically deviant sentences (Fowler, 1988; Gleitman, Gleitman & Shipley, 1972; Hakes, Evans & Tunmer, 1980; Kuczac, 1978). In studies of children aged between 2 and 4 years, who were asked to judge sentences as "good" or "silly" depending on their grammatical correctness, mixed results have been obtained. Some studies reported that even very young children were able to perform at levels above chance on such tasks (Gleitman et al, 1972; Smith & Tager-Flusberg, 1982). However, the criteria used by small children in their judgements were not necessarily related to specific knowledge of grammatical form. Hakes et al (1980), found that the reasons which small children gave for accepting or rejecting deviant sentences were frequently semantically based. The children were as likely to react to the content of the sentence as they were to its form. As the age of the child increased, however, so did the ability to focus on the form of the sentence (Gleitman et al, 1972; Hakes et al, 1980).

Oral cloze tests have also been used as a measure of determining levels of syntactic awareness (Ryan & Ledger, 1982; Tunmer, Nesdale & Wright, 1987; Willows & Ryan, 1986). Typically, in these tasks, children are required to supply the missing words in oral sentences of varying lengths. Oral cloze has been regarded as a valid measure of syntactic awareness, since in order to supply the missing word from a sentence, the child must be able to review the order and structure of the presented sentence and select a word which fits the surrounding context. However, there are some difficulties with the validity of the oral cloze task as a pure measure of syntactic ability. Frequently, in this type of exercise, there are alternative word choices which can be used and still result in syntactically and semantically appropriate sentences. In addition, the cloze

procedure can be used in a variety of ways to test aptitude in other processes such as reading comprehension (McLeod, 1965). Under such circumstances, it may be difficult to represent oral cloze as a purely grammatical measure. Bowey (in press) notes that, "To the extent that grammatical awareness tasks can be successfully completed using semantic processing strategies, their interpretation is compromised."

In order to focus attention on syntactic considerations and not content, other researchers have measured syntactic awareness through oral correction tasks. Usually, these tasks consist of sentences which contain syntactic errors, thus eliminating the need for judgements of correctness or otherwise. The children are required to re-state the deviant sentences in their correct form (Bowey, 1986; Fowler, 1988; Pratt, Tunmer & Bowey, 1984; Tunmer, 1989; Tunmer, Herriman & Nesdale, 1988; Tunmer, Nesdale & Wright, 1987; Willows & Ryan, 1986). The sentences are often presented to the children through a hand puppet who cannot "speak properly". Thus, children are not required to justify or explain their responses to each error, but rather to locate the error itself and correct it. Most sentences in oral correction tasks have contained either morphologically deviant sentences or word-order violations. Willows and Ryan (1986) employed a slightly different format using anomalous or ungrammatical sentences where children were asked to locate one incorrect word and replace it with a more appropriate choice. However, such sentences included semantic as well as syntactic errors, so it is doubtful whether the task could be regarded as a measure of syntactic awareness alone.

In addition to oral correction tasks, some studies have also included error imitation tasks (Bowey, 1986; 1986a; Willows & Ryan,1986). Pratt et al (1984) noted that 5-and 6-year-old children were able to perform at a high level on

morpheme correction tasks, but found word-order changes far more difficult. They suggested that some children may not have noticed the morphological errors because they corrected them spontaneously as they repeated the sentence. If this occurred, then the children were not necessarily reflecting on the syntactic form or structure of the sentence, but were reacting automatically to its incorrect grammatical form. In order to control for this type of spontaneous correction, tasks which require children to repeat, verbatim, grammatically deviant sentences have been employed. The number of spontaneous corrections made is then subtracted from the child's total score.

It has been shown that a variety of tasks has been employed to measure syntactic awareness in research studies. However, the most common has been an error correction task, where the error is syntactically based. In a review of the tasks used to assess grammatical awareness, Bowey (in press) concludes that :

> The overview of the tasks most commonly used to asses grammatical awareness suggests that the grammatical error correction task is most readily comprehended by young children. This task most effectively assesses grammatical awareness when the intended meaning of the sentence is obvious but where the grammatical means used to express that meaning is deviant. In such cases, error correction reflects children's capacity to reflect on and manipulate grammatical well-formedness.

The various syntactic awareness tasks which have been outlined, illustrate the manner in which syntactic awareness has been measured. The most widely used task, the error correction task, appears to be the most appropriate vehicle

to measure syntactic awareness in young children. The development of syntax, however, is also a part of the learning programme in schools. The emphasis which the teaching of syntax receives in schools is frequently allied to the philosophical base upon which the language curriculum is founded.

2.6 THE PLACE OF SYNTAX IN LANGUAGE CURRICULA

Methods of teaching syntax in Western Australian schools have changed along with curriculum changes. The various models of reading, outlined earlier, which have influenced the way in which reading is taught have also influenced the teaching of syntax, particularly in the emphasis given to each of the three cueing systems, semantic, syntactic and grapho-phonic.

The Reading K-7 Teachers Notes (1983) provides no specific focus for the teaching of syntax. Although this document acknowledges the contribution of the syntactic cueing system in reading development, activities to encourage the use of syntactic strategies are embedded within the general context of reading strategies. It is therefore necessary to search the text in order to isolate those teaching strategies which may be appropriate for this purpose. There are activities which are clearly syntactically based, such as cloze activities using nouns, verbs, adjectives and function words. Similarly, activities such as anagrams, sentence re-ordering and reconstruction and the use of punctuation conventions, are all related to the development of syntactic awareness. In this particular document, however, many such activities are organised under the heading of "Word Study" and there is no discussion of the contribution of syntax as such.

The English Language K-7 Syllabus (1989) contains a different

approach to the importance of syntax in the reading process. Its philosophy is that meaning is derived from the interaction of content, process and text. Syntax is contained within the text aspect of this model, in conjunction with word awareness, phonology and graphophonics. In an explanation of the syntactic component of text, the Overview document states, "Syntax is concerned with relationships between words, and how they are organised to function in a sentence. It refers to the grammar of the language, the use of cohesive ties such as word order, tense markers and conjunctions " (p. 21).

This general statement is translated into specific teaching units in the Focus Points section of the document. These units are generally arranged as a hierarchical sequence of skills and understandings across each year level of primary school. It is noted in the document that "some sequences are addressed at each level and increase in difficulty, while others indicate the need to repeat the strategies at each level " (p.39). In the Text section of the Focus Points, syntax is treated as a separate component at each year level along with word awareness, phonology, graphophonics, spelling, punctuation and other aspects of oral and written language. Each of these separate units contains detailed reference to the kinds of activities which need to be considered at each year level. Thus, the attention to syntax and punctuation in this document is quite specific and ordered.

The First Steps (1992) Language Development Programme contains an individual core book for each separate continuum (Reading, Writing, Spelling, Oral Language) and a collection of individual teaching modules which relate to each core book. The module Teaching Grammar is attached to the Writing Developmental Continuum, rather than the Reading Developmental Continuum. This particular link to writing is not meant to be prescriptive in any

way, since aspects of syntax are present in all continua. All the First Steps continua draw heavily upon the English Language K-7 Syllabus for teaching activities and strategies.

The First Steps Grammar Module (1992) defines grammar as "the systematic relationships that exist between the features of the English language" (p.3). The teaching of grammar is considered within a meaningful language context and as an integral part of the writing process. Aspects of grammar are first considered within the process of writing itself, then removed from this context for specific focus, such as in the consideration of placement of capital letters, for example. After this removal for teaching emphasis, the particular grammatical convention is returned to the written context for application and practice.

Although teaching points are not arbitrarily prescribed for each year level, as in the English Language K-7 Syllabus, the Grammar Module provides a framework for different aspects of syntax which need to be considered across various age levels in a detailed scope and sequence chart. In this chart, specific skills may not need to be taught at every level. Some developmental levels require exposure only to a particular convention, while others require specific teaching and continued maintenance in order to encourage correct usage.

In general, the teaching of syntax within Western Australian curriculum documents reflects the teaching of reading. The Reading K-7 Teachers Notes, while it provides activities which relate to syntactic development, does so in an incidental way. The English Language K-7 Syllabus, on the other hand, provides very specific syntactic information, arranged in order of difficulty, across clearly stated year levels. The First Steps documents,

particularly the Grammar Module, incorporate many of the teaching points of the English Language K-7 Syllabus, but present these in a developmental context rather than tied to specific age levels. Grammar is linked more to the context of writing than reading, and is taught in a Whole-Part-Whole sequence, where conventions are first highlighted within written text, removed for specific teaching purposes and then returned to the text for practical application on the part of the writer.

It has been shown that recent curriculum documents have recognised that, to a greater or lesser extent, all three cueing systems require detailed teaching consideration in order to assist children in their reading and writing development. The particular links between syntax and reading have been considered in detail in a number of research studies undertaken during the last two decades.

2.7 STUDIES IN SYNTACTIC AWARENESS AND READING

In this section a number of research studies which have explored the association between syntactic awareness and reading are examined. The studies discussed are classified into correlational, longitudinal and training studies.

Many of the studies which have demonstrated that a relationship exists between syntactic awareness and reading performance have been correlational. Pratt, Tunmer and Bowey (1984) conducted a study to assess grammatical awareness in 5-and 6-year-old children by examining the children's ability to correct grammatical violations in sentences. The subjects were 16 preschoolers and 16 first grade children tested at the end of the school year. In order to avoid acceptability judgements, which might have focused attention as much on

sentence content as sentence structure, an oral correction task containing only grammatically incorrect sentences was employed. This task consisted of 24 items, 12 of which involved morpheme deletions and the remaining 12, word order violations. Both age groups performed at a high level on the morpheme deletions, but on the word order violations, the 6-year-olds performed better than the 5-year-olds. The researchers concluded that the high results on the morpheme deletion test may have resulted for one of two reasons: either the children spontaneously edited out the grammatical violations as they repeated the sentences; or they possessed sufficient metalinguistic ability to focus on the grammatical structure itself. The lower scores on the word-order correction task may have reflected the increased difficulty involved when the meaning of a sentence is affected by the order of the words. In the morpheme deletion task the meaning of the sentence was largely unchanged by the missing morpheme, but when the order of words within a sentence is changed, the meaning may also be altered.

In a study which also examined the role of grammatical awareness in young children, Willows and Ryan (1986) tested first, second and third grade children on a variety of oral language tasks in order to assess the role of grammatical sensitivity in children at the early stages of reading development. Syntactic awareness was measured in three ways: error location and correction; sentence repetition; and listening cloze. In the error location and correction task, 20 ungrammatical or anomalous sentences were presented. The children were required to locate the incorrect word within an orally presented sentence and replace it with a more appropriate choice. The sentence repetition task required the repetition, verbatim, of a series of ungrammatical sentences to assess whether or not children made spontaneous corrections; while in the listening

cloze task children needed to supply a suitable word to complete a given sentence. The missing words included nouns, verbs, adjectives and function words.

The results for the syntactic tasks showed significant main effects for grade across each task, with the older children performing better than the younger children. In addition, when general cognitive ability and vocabulary were controlled, grammatical sensitivity was found to be significantly related to reading skill. However, as Willows and Ryan noted, other explanations, such as the contribution of reading experience to grammatical sensitivity or the possible reciprocal effect of grammatical sensitivity and reading development, may have contributed to this finding. Furthermore, the error location and correction task contained sentences with both semantic and syntactic errors, so it cannot be considered as a measure of syntactic awareness alone. Nevertheless, the study did confirm the Pratt et al. finding of clear age effects in syntactic development.

A study which measured syntactic awareness and verbal performance in children from preschool to fifth grade was conducted by Bowey (1986). The children were given an aural sentence memory task and two syntactic awareness tasks: a sentence repetition task and an oral correction task. For the sentence memory task, the children were required to repeat 12 sentences, which varied in length from 5 to 15 words, and contained blocks of normal, anomalous and random sentences. The anomalous sentences contained substitutions from the normal sentence sets, and the random sentences contained randomised word-order changes. In the syntactic awareness tasks, two sets of 30 grammatically deviant sentences were constructed. The error imitation task required the children to repeat, verbatim, one set of sentences and then to correct the violations in the second set for the correction task.

The results for the sentence memory task revealed significant main effects for grade and the results for the syntactic awareness task revealed significant main effects for grade and task. Performance on the error imitation task was superior to performance on the oral correction task across all age groups. Syntactic awareness increased with age independently of vocabulary development and was also significantly related to both semantic and syntactic structure in aural sentence recall. The syntactic control was significantly correlated with reading age scores on the St. Lucia Reading Test (Andrews, 1969), anomalous sentence recall and normal sentence recall. The syntactic control consisted of the difference between the intentional and spontaneous corrections made on the error imitation task.

Bowey noted that because levels of syntactic awareness were positively correlated with syntactic structure in aural sentence recall, even when vocabulary age and grade level were controlled, syntactic awareness could be considered as a higher-order language processing skill. However, the syntactic control measure also retained a significant correlation with semantic structure (as measured by normal sentence recall) which also increased with grade level. Thus, while the suggestion that syntactic awareness constitutes a higher-order processing skill may well be true, aspects of semantic understanding may also be involved in such processing.

Fowler (1988) used second grade children (18 boys and 18 girls) in a study to measure grammaticality judgements and reading skill. The children were tested on a decoding skills task which measured word recognition, real word decoding and pseudo-word decoding. An auditory analysis test (AAT) was used to assess metaphonological skill, and a sentence repetition task to measure short-term memory. Syntactic awareness was measured by a grammaticality

judgement task and an oral correction task.

For the grammaticality judgement task 100 pairs of taped sentences of equal length were presented over several sessions. The sentences contained five classes of grammatical violations. The children recorded their judgements through the use of a five-point pictorial scale containing faces with different expressions. If a sentence was spoken correctly, the children pointed to a smiling face. If the sentence was incorrect, the sad face was used. Three neutral faces for the mid-points of the scale were used if the child was unsure whether the sentence was correct or incorrect. In the oral correction task 50 of the same sentences were used, but this time the children were asked to correct the mistake as they heard it.

When the results were analysed, it was found that the children scored well above chance level in detecting the ungrammatical sentences in the judgement task, though performance was significantly affected by the type of grammatical condition. Correlations between reading skill and scores on the judgement task were not significant for all of the error types tested. Significant correlations were obtained between scores on the metaphonological and short-term memory tests and scores on the reading test. Scores on the correction task, however, were significantly correlated with short-term memory, metaphonological skill and reading skill. Fowler noted that the results of this study were consistent with others in which a strong correlation between reading ability and correction tasks had been recorded.

Both the judgement and correction tasks used in this study seem to be quite demanding when the age of the subjects is considered. Although the children were not required to justify their responses in the judgement task, they were required to listen to 100 taped sentences which would seem to indicate the need

for extended levels of concentration on their part. Similarly, the presentation of 50 grammatical sentences to be corrected in the error correction task is almost twice as many as those contained in other studies where children of similar ages were involved.

A correlational study of a different design was undertaken by Tunmer, Nesdale and Wright (1987). They employed a reading-level design in which good younger readers were matched with poor older readers on tests of reading comprehension, word recognition, pseudo-word naming and reading fluency. The groups were then tested on two measures of syntactic awareness: an oral cloze task and an oral correction task. In the oral cloze task, children were asked to supply the missing words in 32 orally presented sentences with an average length of 10 words. For the oral correction task, 18 sentences containing morpheme deletions or word order changes were presented to the subjects. The results of these tests showed that the good second grade readers performed better than the poor fourth grade readers on both syntactic awareness tasks. Correlational analyses showed that the relationship between the two syntactic awareness tasks was highly significant and remained so even when verbal intelligence was held constant. Tunmer et al suggested that the poor older readers may have been developmentally delayed in syntactic awareness. This conclusion was further supported by the fact that the better readers at each grade level obtained higher results in the syntactic awareness tasks than did the poorer readers.

The reading-level design has the advantage of a clearer interpretation of findings since it would be unlikely, in this kind of study, that differences in levels of syntactic awareness between the two groups would be due to the greater reading experience of the better readers. While all of the studies considered

thus far have demonstrated that a relationship exists between syntactic awareness and reading, evidence for the existence of a causal relationship is disputed. Longitudinal studies, which record the development of levels of syntactic awareness and reading performance, over a longer time frame, may provide more definitive information.

A 2-year longitudinal study conducted by Tunmer, Herriman and Nesdale (1988) measured the role of metalinguistic abilities in the early stages of learning to read. Children at the beginning of first grade were tested in three tasks of metalinguistic ability: phonological awareness, syntactic awareness and pragmatic awareness. In addition, three tests of beginning reading (Clay, 1979), the Peabody Picture Vocabulary Test (PPVT) and a test of concrete operational thought were also employed. At the end of first grade the metalinguistic tests and the reading tests were re-administered along with three subtests of the Interactive Reading Assessment System (IRAS) which measured real word decoding, pseudo-word decoding and reading comprehension. At the end of second grade, the three IRAS subtests were re-administered. The syntactic awareness task used in the study was an oral correction task similar to those used in other studies (Pratt et al, 1984; Tunmer et al, 1987). Twenty sentences of comparable length containing word-order violations were presented orally to the subjects for correction.

Predictive correlations between the combined scores on the metalinguistic tasks at the beginning and end of first grade and later reading achievement were significant. This was also true for each individual measure of metalinguistic ability, although phonological and syntactic awareness played a more important role in beginning reading than pragmatic awareness. However, Bowey (in press) has suggested that the pragmatic awareness task used in this study

cannot be considered a metalinguistic task since it required the subjects to monitor language meaning rather than language structure.

A similar 2-year longitudinal study which also measured metalinguistic abilities and beginning reading was conducted by Tunmer (1989). At the end of first grade, 100 children were administered tests of phonological awareness, syntactic awareness, the PPVT, a test of concrete operational thought and four subtests of the IRAS: real word decoding, pseudo-word decoding listening comprehension and reading comprehension. At the end of second grade these tests were re- administered to 84 of the original subjects. An oral correction task, similar to that used in the previous study measured syntactic awareness. In this task children were required to correct word order violations in sentences of 3 to 5 words in length.

The results of this study showed that for the first grade children the two metalinguistic tasks, phonological awareness and syntactic awareness, were significantly correlated with the two decoding measures. However, syntactic awareness was more strongly correlated with both listening and reading comprehension than was phonological awareness. A similar pattern of significant correlations was obtained for the second grade measures. Predictive correlations indicated that end of first grade results on the phonological awareness and syntactic awareness tasks contributed directly to second grade decoding. Only syntactic awareness, however, predicted second grade listening comprehension. Tunmer noted that this finding was consistent with the view that syntactic awareness influences the comprehension monitoring component of listening comprehension which, in turn, indirectly influences reading comprehension.

Another 2-year longitudinal study conducted by Blackmore (1991) examined the relationship between syntactic awareness and reading performance in young children. Seventy-three children of low socio-economic status were given tests of syntactic awareness, vocabulary, verbal working memory and concrete operations at the beginning of Year 1. Throughout the following 2 years, the children were tested 5 times in syntactic awareness and reading skills. Syntactic awareness was measured by an oral correction task which contained morpheme deletions and word order changes, as well as an oral cloze task. Four subtests of the IRAS, letter recognition, word recognition, pseudo-word decoding and reading comprehension, were used to measure reading achievement. At the end of the testing period, the pattern of correlations between syntactic awareness and reading skills suggested that reading skills influenced the development of syntactic awareness at early Year 2 level, but by the end of Year 2 syntactic awareness influenced the development of reading skills. This relationship was not accounted for by vocabulary, verbal working memory or concrete operations. These results suggest possible reciprocal effects between syntactic awareness and reading development, although the greater reading experience gained by children after two years at school may also have been a contributing factor.

A further longitudinal study, which extended over 3 years, was undertaken by Bryant, MacLean and Bradley (1990) with 65 children from age 3 to age 6. At a mean age of 3;4 years the children were tested in vocabulary and receptive language. At 4;7 years, the children were again tested, this time in rhyme, alliteration and syntactic awareness. The syntactic awareness measure was an oral correction task modelled on that of Tunmer, Nesdale and Wright (1987). The children were required to correct 16 sentences, 8 with a missing morpheme

and 8 involving word order changes. A few months later, at age 4;11 a sentence imitation task of 12 sentences of increasing length and complexity was administered. Finally, at age 6;7 the children were given 3 standardised tests of reading comprehension, word recognition and spelling ability.

The results showed that the linguistic features measured by tests given to the subjects when they were 3 and 4 years old accounted for a high proportion of the variation in their word recognition, reading comprehension and spelling at age 6. Scores in rhyme and alliteration at age 4 predicted spelling and reading levels at age 6 after controlling for general language ability, social background and intelligence. The scores on the syntactic awareness task were also related to reading performance after differences in general language ability were partialled out. However, the relationship between syntactic awareness and reading was not significant when social background and IQ were entered into the regression equation. The researchers concluded that the relationship between syntactic awareness and reading probably reflected differences in these other variables.

The Bryant et al. study is particularly interesting on several counts. Firstly, it studied linguistic and metalinguistic skill across a significant time span of early childhood development. Secondly, it endeavoured to control for the influence of other variables which may also affect language development. When this was done, syntactic awareness did not make an independent contribution to reading performance.

The studies which have examined the relationship between syntactic awareness and reading have provided some evidence for the suggestion that syntactic awareness influences reading performance, particularly in relation to performance in error correction tasks. However, the existence of a relationship

required. Indeed, as Bradley and Bryant (1985) noted, the effects of longitudinal and training studies are complementary :

> The longitudinal study shows that there is a relationship in real life and the training study establishes that the relationship is genuinely causal. Neither method on its own can tell the whole story, but put together, they add up to a formidable tool (p.20).

2.8 TRAINING STUDIES IN SYNTACTIC AWARENESS

There are very few training studies in the research literature which deal, specifically, with the relationship between syntactic awareness and reading. Furthermore, those which do exist tend to have small numbers of subjects and small transfer effects.

Weaver (1979) reported the results of a study with third grade children who were trained in a sentence anagram strategy. Thirty-one children took part in the study and were assigned to experimental and control groups with 16 in the experimental group and 15 in the control group. The experimental group received training in sentence anagram techniques for 10 - 15 minutes three times each week while the control group received no treatment. Training in sentence anagram tasks involved rearranging a jumbled set of words to form a coherent sentence. As the training progressed, the length of the sentences increased from 5 words to 15. In addition to this training, the experimental group was also taught a word grouping strategy. This strategy involved arranging words systematically into phrases and then arranging the phrases into sentences. The experimental group was taught to form word groups by first

identifying the action word (verb) and then to ask a series of questions in order to group the remaining words. The questions involved the use of a "Wh" technique: Who? What? Where?

At the conclusion of the training period, both groups were tested on a sentence anagram task, prompted sentence recall, passage comprehension, cloze comprehension and a meaningful sentence judgement task. The children who received the training were quicker and more accurate on the sentence anagram task than those who received no training. When reading comprehension was measured, the children who received training performed significantly better than those who did not. However, univariate analyses showed that the experimental group performed better than the control group only on the prompted sentence recall and the cloze tasks, which casts doubt upon the independent contribution of syntactic awareness to reading comprehension.

A study by Scholl and Ryan (1980) was conducted to assess the development of metalinguistic performance in children during the early years at school. Sixteen kindergarten, 16 second grade and 12 fourth grade children were tested in both a sentence judgement and a sentence repetition task. The kindergarten children were also tested in reading readiness and the second and fourth grade children in oral reading. The kindergarten children and second grade children were then assigned to equal treatment and no-treatment groups at each level. Twelve fourth graders were also observed, but not included in the treatment groups. A series of sentences, both grammatically correct and grammatically deviant, was presented to each subject with the use of accompanying slides. Each slide depicted a mother and a child. The subjects were required, in the sentence judgement task, to select whether the mother or

the child was the speaker of the sentence which they heard. The mother's responses were always correct and the child's incorrect. In the sentence repetition task, the children were asked to repeat the same sentences used in the judgement task exactly as they heard them. The no-treatment group received no feedback on the correctness or otherwise of their responses. The treatment group received immediate feedback on their responses after each item.

The results showed a significant main effect for grade in the sentence judgement task with the older children producing more accurate judgements than the younger children. There were no age differences for the sentence repetition task. In addition there were no significant treatment effects and no pattern of positive relationships between the two metalinguistic tasks and reading scores. However, there was a significant correlation between the judgement task scores of the kindergarten group and their scores on the reading readiness test. Scholl and Ryan suggest that the preschoolers' results provide some evidence for the existence of a relationship between awareness of syntax and ability to read.

A study was designed by Sampson, Valmont and Van Allen (1982) to examine the effects of training in instructional cloze with third grade students, upon divergent thinking, vocabulary development and reading comprehension. Sixty-eight third-grade students, randomly selected from schools within one school district, took part in the study. From this group, 34 were randomly assigned to an experimental group and 34 to a control group. In addition, 24 third grade children from a single classroom were also randomly assigned to experimental and control groups with 12 children in each group. All the students who participated were good grade-level readers. The children were

pretested in vocabulary, reading comprehension and a cloze comprehension test selected from a basal reader. The study was conducted over a 15-week period during which all subjects received 2 or 3 reading lessons each week of equal instructional time.

A proportion of the lessons for the experimental groups consisted of instruction in cloze procedures (27 lessons in all). At the end of each cloze activity, the group received feedback and discussion on their responses. At the conclusion of the 15 weeks, all groups were posttested in the same tests used at pretest. Their responses on the cloze measure were analysed and the number of divergent responses tallied for each group. The results showed that the experimental groups performed significantly better than the control groups in cloze comprehension, reading comprehension and divergent production. There were no differences between the groups in vocabulary development. The larger numbers involved in this study may have contributed to the significance of the results. In addition, training in cloze procedures may involve semantic as well as syntactic processing (Bowey, in press).

White, Pascarella and Pflaum (1981) conducted a study with learning disabled children trained in sentence construction based on Weaver's (1979) sentence anagram and word grouping strategies. The 30 learning disabled children who represented different ethnic backgrounds, were randomly assigned to two groups : a sentence anagram group and a sentence study group. The subjects were pretested in a sentence anagram task and a cloze test. Each group received 21 lessons carried out over 8 weeks. At the beginning of the training period both groups were informed that the lessons were to help them become better readers. The sentence anagram group was taught procedures of word grouping. The sentence study group received a variety of sentence

patterning tasks which included the use of punctuation, nouns and pronouns, statements and questions.

The results showed that those children in the sentence anagram group performed at significantly higher levels on sentence construction and cloze tests at posttest than the sentence study group. However, the sentence study group also showed gains in these tests even though such gains were less than the sentence anagram group. In effect, both groups had received training in grammatical awareness, since the sentence study group were taught syntactically-based sentence activities. White et al. suggest that their study indicates that learning disabled children gained the same kinds of benefits from this type of training as did the average and above average third graders used in Weaver's earlier study. The sentence anagram technique used in both studies, clearly assists in the comprehension monitoring of text since the grouping of words and phrases requires a focus on meaning as well as structure.

In a study with a somewhat different emphasis, Short and Ryan (1984) examined the effects of training in story grammar with less skilled readers. Fifty six fourth grade boys took part. Fourteen of the subjects were skilled readers and 42 were less skilled. The 42 less skilled readers were randomly assigned to one of three training conditions while the skilled readers served as a contrast group in posttest assessments. The three training groups did not differ in comprehension, probed recall or intelligence. One of the groups received both story grammar and attribution training, while the remaining two groups received training in either story grammar or attribution training.

The children who received training in story grammar were taught to ask a number of "Wh" questions as they read text: Who was the main character? Where and when did the story take place? What did the main character do?

Children who received attribution training were reminded of the importance of personal effort in successful reading. A group of attribution statements was recited before each reading session. These included : Enjoy yourself. Try hard. Praise yourself.

The results showed that those groups who received story grammar training exhibited superior performance in reading comprehension to the group which received attribution only training. The researchers concluded that story grammar training appeared to to provide the less skilled readers with an organisational framework with which to retrieve information and monitor their comprehension. Both the training strategy and the results of this study are similar to those reported by White et al.

A comprehensive training study in grammatical awareness with Year 1 children who were pre-readers was conducted by Milton (1990). Sixty children were matched on verbal intelligence (PPVT) and short-term verbal memory before random allocation to groups. There were three groups in all : an experimental grammatical awareness training group, a vocabulary extension control group and a no-treatment control group. All children were tested on two syntactic awareness tasks: an error correction task and an oral cloze test. The experimental training group then received 30 lessons of activities designed to increase grammatical awareness, over a 10-week period. The vocabulary extension group received lessons in vocabulary, based on a thematic teaching approach. The no-treatment group received normal classroom lessons.

At the conclusion of the training period, the three groups were tested on an oral correction task of 24 items and an oral cloze task. The results showed that the experimental group performed significantly better that the two control groups in the error correction task. However, even those children who had received no

specific syntactic training increased their scores on the error correction task between pretest and posttest. Follow-up testing at mid-Year 1 level showed that the experimental group scored significantly better than both control groups on listening comprehension, and better than the vocabulary control group, but not the no-treatment control group, on real word decoding. At the end of the year, the groups were tested on the IRAS subtests of real word decoding, pseudo-word decoding and reading comprehension. The results of these tests showed no differences between the groups. The earlier gains established by the experimental group in real word decoding were not maintained as the children increased their reading experiences. Milton noted that her results showed that children who were pre-readers could be trained in syntactic awareness, although the gains made by all groups suggested that the kinds of language activities conducted in Year 1 classrooms also assisted the development of syntactic understanding for all children. This supports the hypothesis that as children gain in reading experience, they also increase their syntactic development.

At the present time, there is limited evidence from training studies to support the existence of a causal relationship between syntactic awareness and reading development. In addition, it could be argued that the term "syntactic awareness" implies a generalised understanding of the conventions upon which the structure of language is based. However, most of the existing training studies, with the exception of that by Milton, have focused on a specific aspect of syntax rather than a consideration of more general understandings. It seems logical to assume that any connection between reading comprehension and syntactic development would require general, rather than specific, syntactic knowledge. Milton's study examined syntactic understanding in general terms,

with children who were pre-readers. There is clearly a need to extend this same kind of training to children who have some reading experience. This is the aim of the present study.

2.9 RESEARCH QUESTIONS

The purpose of this study is to examine the part that training in syntactic awareness contributes to reading performance with children in their first two years at school. In this context, there are four research questions to be considered :

1. Do Year 1 and Year 2 children trained in syntactic awareness show significantly greater improvement in syntactic awareness than children who receive no specific training?

2. Is there a significant difference in reading performance between Year 1 and Year 2 children trained in syntactic awareness and those who receive no specific training in syntactic awareness?

3(a). Do Year 1 and Year 2 children trained in syntactic awareness demonstrate significantly higher levels of syntactic awareness after such training?

3(b). Do Year 1 and Year 2 children not specifically trained in syntactic awareness demonstrate significantly higher levels of syntactic awareness without training?

4(a). Do Year 1 and Year 2 children trained in syntactic awareness demonstrate significantly higher levels of reading performance after such training?

4(b). Do Year 1 and Year 2 children not specifically trained in syntactic awareness demonstrate higher levels of reading performance without training?

CHAPTER 3
METHOD

3.1 DESIGN

An experimental 2 (group: experimental, control) x 2 (grade: Year 1, Year 2) design was chosen for the study (Campbell & Stanley, 1963). The subjects were pretested in syntactic awareness and reading. From these results, matched pairs were obtained and one of each matched pair was assigned to either the experimental or the control group. A 10-week training study in syntactic awareness was conducted with the experimental groups, while the control groups received no special treatment. At the conclusion of the training study, posttests in syntactic awareness and reading were carried out with all groups. Figure 3.1 illustrates the design of the study.

	Year 1	Year 2.
Experimental	Group 1 N = 17	Group 2 N = 19
Control	Group 3 N = 17	Group 4 N = 19

Figure 3. 1. Experimental design of the study.

3.2 SUBJECTS

The subjects of the study were a convenience sample of three complete classes of Year 1 and Year 2 children from a metropolitan primary school located in a middle socio-economic area of Perth, Western Australia. The classes consisted of one Year 1 class, one Year 2 class and one composite Year 1 and 2 class. Two children from non-English speaking homes, one deaf child and five others who could not be successfully matched at pretest, were included in the programme but were not represented in the data. In all, 72 children, 34 at Year 1 level and 38 at Year 2 level were included. All children were pretested in reading and syntactic awareness and matched pairs were assigned to experimental and control groups at each year level. A total of 17 matched pairs participated at Year 1 level and 19 matched pairs at Year 2 level. The age range was 5;8 years to 6;8 years for Year 1 and 5;8 years to 7;8 years for Year 2. Table 3.1 shows the mean ages for all groups at pretest.

Table 3.1

Mean Ages for All Groups at Pretest

Grade	Group	Mean Age
1	Experimental	6.1 yrs
1	Control	6.1 yrs
2	Experimental	7.0 yrs
2	Control	7.3 yrs

3.3 INSTRUMENTS AND MATERIALS

The instruments used in both the pretests and posttests to measure reading ability were the Neale Analysis of Reading Ability Revised (Neale,1988), the St Lucia Graded Word Test (Andrews,1969) and the Ready-to-Read-Word-Test (Clay,1979). The instrument used to measure syntactic awareness was an oral correction task constructed by Pratt, Tunmer and Bowey (1984), variants of which have been used in several studies (Tunmer,1989; Tunmer, Nesdale & Wright,1987) as a measure of syntactic awareness. In addition, a test of written syntactic awareness, devised by the researcher, was given to all groups at posttest.

3.3.1 The Neale Analysis of Reading Ability Revised (Neale,1988)

The test consists of six graded passages of prose presented in two parallel forms, bound and illustrated in book form. The passages are designed to measure reading accuracy, comprehension and rate. Standardized scores in the form of percentile ranks, stanines and reading ages are provided for each form of the test. The Neale Analysis was extensively tested with 1100 primary school children (age range 6.0 to 12.0 years) from two Australian states. The results indicated high levels of stability, reliability and internal consistency (Neale,1988 p.49). Parallel forms reliability coefficients of 0.98, and 0.95 were obtained for accuracy and comprehension across all age groups, and internal consistency (KR 20) coefficients of 0.81, 0.83, 0.90, and 0.89 respectively.

3.3.2 St Lucia Graded Word Test (Andrews,1969)

This is a word recognition test of 100 words, graded in difficulty. A reading age is established according to the number of words read correctly. The normative sample consisted of 435 children from primary schools in Brisbane and a test-retest reliability coefficient of 0.95 was obtained.

3.3.3 Ready-to-Read-Word-Test (Clay,1979)

This test of word recognition consists of three lists, A, B and C, with 15 high frequency words in each. The words used are those common to reading materials for beginning readers. Stanine scores are provided for children aged from 5.0 to 7.3 years. An internal consistency reliability coefficient (Kuder-Richardson) of 0.90 is quoted with children aged 6.0 years, and a correlation coefficient (with Schonell Reading 1) of 0.90.

3.3.4 .Oral Correction Task (Pratt,Tunmer & Bowey,1984)

This task consists of 24 sentences divided into 2 categories, morpheme corrections and word order corrections. Each category contains 12 sentences plus 2 practice examples. The sentences range in length from 4 to 6 words, with an average length of 4.5 words for the morpheme correction task and 4.6 words for the word order corrections (see Appendix A). In the present study, the original form of the test was used and an alternate form was also compiled (see Appendix A). All subjects received both forms either at pretest or posttest. The alternate form reproduced, exactly, the type of grammatical violation, number of words in each item and the sentence ordering of the original form.

Six extra items were constructed containing more difficult grammatical violations and these were administered, by the researcher, to those subjects who scored 21 or more on the correction task at pretest. A similar alternative form was constructed for posttesting. These more difficult items were selected from Form A of the Syntactic Awareness Task constructed by Bowey (1986).

3.3.5.Written Syntactic Awareness Test

All subjects were given a written test of syntactic awareness at posttest. This test was constructed by the researcher and was based on the content of the training programme. The Year 1 test contained 8 items which tested aspects of syntax such as word order, singular and plural words, questions and statements, etc (see Appendix B). The Year 2 test contained 10 items which tested word order, joining words, nouns, verbs and adjectives etc (see Appendix B). An internal consistency level of 0.85 was obtained for the Year 1 test and 0.75 for the Year 2 test (KR 21).

3.3.6.Training Study Materials

The content for the lessons was selected from curriculum documents compiled by the Ministry of Education for use in West Australian Schools. These consisted of the English Language K-7 Syllabus (1990), First Steps Writing Developmental Continuum (1992) and First Steps Language Development Grammar Module (1992). These documents provide an overview of the teaching content appropriate to both age and developmental levels of children,

but do not provide a teaching sequence, which remains the prerogative of individual teachers.

3.4 PROCEDURE

3.4.1 Testing

The pretests were conducted at the beginning of the third term of the school year. The subjects were tested, individually, by the researcher, in a quiet room at their school. Two testing sessions were held; one for the reading tests and one for the oral correction task. The reading tests took approximately 20 to 25 minutes to administer and the oral correction task 15 to 20 minutes. The Neale Analysis, St Lucia Test and the Ready-to-Read-Word-Test were administered according to their handbook guidelines. The oral correction task was conducted using a hand puppet according to the procedure described by Pratt, Tunmer and Bowey (1984). For the sentences involving morpheme corrections, the following instructions were given to the children. "This girl says things that don't sound quite right. Can you fix up what she says and make it sound right?" Two practice items, with corrective feedback were given and the 12 test items were presented without feedback. For the sentences involving word order changes, the children were introduced to another puppet with the following instructions. "This boy says things that are all jumbled up. Can you unjumble his sentences and say them the right way round?" Two practice items, with corrective feedback, were given and the 12 test items were presented without feedback.

Raw scores were calculated for all children in the accuracy and comprehension sections of the Neale Analysis Form 1. These raw scores were then converted to standard scores . The resulting 2 standard scores were

combined to form a single, composite reading score. Since 10 children in Year 1 were unable to score on Form 1 of the Neale Analysis, the St Lucia Test and the Ready-to-Read-Word-Test were administered to Year 1 children only in order to give them a reading score above floor level. The scores for the St Lucia and the Ready-to-Read-Word-Test were then converted to standard scores and combined into a composite score in the same way as for the Neale Analysis. In this way, the Year 1 children received three tests and the Year 2 children received two tests.

In the oral correction tasks, all children received both forms of the test at either pretest or posttest. For the morpheme correction task, items were scored as correct if the sentence was both grammatically sound and its meaning unaltered. For example, the item Jim eat cake every day was scored as correct if the children said Jim eats cake every day or Jim ate cake every day. In the word order correction task, items were scored as correct only when the subject correctly re-ordered all the words presented. For example, in the sentence Cooked the dinner Mum, Mum cooked the dinner was scored as correct while Mum is cooking the dinner was scored as incorrect.

The results of the pretest scores in the various reading tests and the oral correction task were collated and from these scores matched pairs of subjects were obtained. The Year 1 children were matched on their composite scores for the Neale Analysis, St. Lucia Test, Ready-to-Read-Word-Test, and their raw score for the oral correction task. The Year 2 groups were matched on their composite score for the Neale Analysis and their raw score for the oral

correction task. One of each matched pair was then assigned to either an experimental or control group.

All children were posttested in early December. The conditions which applied for testing at pretest were replicated at posttest. Alternate forms of the same tests were used with the exception of the St Lucia test which contains only one form. All children were tested individually, by the researcher, in the same manner as for the pretests. In addition, at posttest, a written test of syntactic awareness, based on the content of the training programme, was completed by all subjects in all groups. Since it was not possible for the researcher to present the written test to all groups on the same day, it was administered by the teacher with responsibility for each particular group on the final day of the training period. In order to minimise possible differences in teacher presentation and direction, written instructions were provided for the administration of each test. Since the content of the programme was different for each year level, separate tests and instructions were provided for Year 1 and Year 2. The tests and their instructions are presented in Appendix B.

Table 3.2 illustrates the organisation of the matched groups and the tests each group received at pretest and posttest.

Table 3.2

Tests and Group Organisation at Pretest and Posttest

Group	N	Pretest	Treatment	Posttest
Yr 1 Exp	17	Neale Form 1 St Lucia RTRWT List A Oral Correction A/B	Training	Neale Form 2 St Lucia RTRWT List B Oral Correction B/A Written Test
Yr 1 Control	17	As Above	No Special Training	As Above
Yr 2 Exp	19	Neale Form 1 Oral Correction A/B	Training	Neale Form 2 Oral Correction B/A Written Test
Yr 2 Control	19	As Above	No Special Training	As Above

Exp = Experimental Group. RTRWT = Ready-to-Read-Word-Test

3.4.2 Training

The two experimental groups (Year 1 and Year 2) received a treatment programme of intensive training in syntactic awareness. The two control groups received normal classroom language instruction. Four teachers, one of whom was the researcher, took part in the study. Each teacher assumed responsibility for one group on a weekly basis. The training period was staggered across two terms of the school year; the last 3 weeks of Term 3 and the first 7 weeks of Term 4 with the normal 2 week vacation in between. This structure was necessary in order to minimise disruption to the classes involved and comply with the timetable constraints of the school as a whole. Three half-hour sessions were held with all groups each week, in which the 2 experimental groups received intensive training in aspects of syntactic structure and the 2 control groups took part in general, language-based activities. The time of day (9.55 a.m to 10.25 a.m.) remained constant throughout the training period.

All the teachers involved had programmed language-based activities as part of their class timetables for the morning session each day. It was decided that all the groups, both experimental and control, should replicate, as much as possible, the normal programme appropriate to their year level. A lesson plan framework, consistent with normal classroom procedures, was constructed in consultation with the teachers involved and applied, equally, to all the groups of subjects. This framework is outlined in Table 3.3.

Table 3.3

Lesson Plan Framework for All Groups

Introductory Activity (5 mins) :	Familiar or new rhyme, poem, chant or Big Book story.
New Lesson (15 mins) :	Introduction of new concepts Explanation/Modelling by teacher Contributions by children Practice Summary
Consolidation (10 mins) :	Extra practice activity (oral/written) to revise main teaching points.

In order to minimise possible Hawthorne effects, three practice sessions were conducted with all groups in the week preceding Week 1 of the training programme. Each group received a different teacher for each of these 3 sessions. In the training programme itself, possible teacher effects were treated by rotating the various groups on a weekly basis. The two experimental groups were rotated between 2 teachers and the control groups rotated between the remaining 2 teachers. It was felt that to rotate the groups between 4 different teachers would prove disruptive for children of this age. Table 3.4 illustrates the organisation of groups and teachers throughout the duration of the training period.

Table 3.4

Training Study Organisation of Groups and Teachers

Week	Teacher 1	Teacher 2	Teacher 3	Teacher 4
1	Yr 2 E*	Yr 2 C*	Yr 1 C	Yr 1 E
2	Yr 1 E	Yr 1 C	Yr 2 C	Yr 2 E
3	Yr 2 E	Yr 2 C	Yr 1 C	Yr 1 E
4	Yr 1 E	Yr 1 C	Yr 2 C	Yr 2 E
5	Yr 2 E	Yr 2 C	Yr 1 C	Yr 1 E
6	Yr 1 E	Yr 1 C	Yr 2 C	Yr 2 E
7	Yr 2 E	Yr 2 C	Yr 1 C	Yr 1 E
8	Yr 1 E	Yr 1 C	Yr 2 C	Yr 2 E
9	Yr 2 E	Yr 2 C	Yr 1 C	Yr 1 E
10	Yr 1 E	Yr 1 C	Yr 2 C	Yr 2 E

* E = Experimental Group * C = Control Group

3.4.3. Training Study Content

The content for each lesson in the training programme was selected from the Western Australian Ministry of Education curriculum documents cited previously. The entire lesson content of the training programme for the experimental groups is presented in Appendix C, and the classroom lessons for the control groups in Appendix D. Table 3.5 lists the training programme content in summary form.

Table 3.5

Lesson Content for the Treatment Groups

YEAR 1	YEAR 2
Using language patterns	Sentence meanings
Sentence re-ordering	Word order in sentences
Sentence re-structuring	Sentences/non-sentences
Plurals- adding 's'	Text innovation
Past tense- 'ed' endings	Word endings- 'ing'
Text innovation	Subject/verb agreement
Subject/verb agreement	Possessive 's'
Word endings-'ing'	Plural 's'
Endings to base words	Adjectives in text
Expanding sentences	Adjectives in isolation
Questions and answers	Adding sentence detail
Question mark in text	Questions and answers
Nouns-'naming words'	Punctuation markers
Verbs 'doing' words	Selecting nouns in text
Punctuation markers	Recognising adjectives
Classifying words in text	Making rules and definitions
Classifying actions in text	Sentence analysis and classification

CHAPTER 4
RESULTS

The results of the study are presented in terms of its four Research Questions. The first section reports on the differences between the groups in syntactic awareness at pretest and posttest. The next section of the chapter examines the differences between the groups in reading at pretest and posttest. The remaining sections of the chapter report on the increases in syntactic awareness and reading displayed by the different groups between pretest and postest. Correlational matrices between syntactic awareness and reading measures, since they are not directly related to the Research Questions, are not shown in this chapter but are presented in Appendix E.

4.1 RESEARCH QUESTION 1: DIFFERENCES BETWEEN THE GROUPS IN SYNTACTIC AWARENESS

Do Year 1 and Year 2 children trained in syntactic awareness show significantly greater improvement in syntactic awareness than children who receive no specific syntactic awareness training?

Before the commencement of the training study, all subjects were pretested in syntactic awareness (oral correction task). Matched pairs were then assigned to experimental and control groups at each year level. Table 4.1 shows the means and standard deviations for each matched group after pretesting in syntactic awareness.

Table 4.1

Mean Scores of Matched Groups in Oral Correction Task at Pretest

Grade	Group	Mean	SD
1	E	13.05	4.85
1	C	13.47	4.39
2	E	20.90	4.97
2	C	20.52	4.48

E = experimental group; C = control group

A 2 (group: experimental, control) x 2 (grade: Year 1, Year 2) analysis of variance was carried out on the pretest scores for syntactic awareness. The results revealed no significant main effects for the groups, F (1,68) = .074, p>.05. A significant main effect was recorded for grade, F (1,68) = 45.26, p<.001, which reflected the higher performance of the Year 2 groups. The interaction was not significant, F (1,68) = .010, p>.05. Thus, there were no significant differences between the groups in syntactic awareness at pretest.

At the conclusion of the 10-week training study, the experimental and control groups from each year level were posttested in syntactic awareness using an alternative form of the oral correction task from that used at pretest. Means and standard deviations for all groups at posttest are shown in Table 4.2.

Table 4.2

Mean Scores for All Groups in the Oral Correction Task at Posttest

Grade	Group	Mean	SD
1	E	18.23	4.18
1	C	17.65	5.06
2	E	24.56	2.85
2	C	23.31	3.79

A 2 (group: experimental, control) x 2 (grade: Year 1, Year 2) analysis of variance was carried out on the syntactic awareness posttest scores. No significant main effects were recorded between the groups after training F (1,68) =.127, p>.05. A significant main effect was recorded for grade F (1,68) = 40.75, p<.001, which indicated that at posttest the Year 2 groups obtained higher scores than the Year 1 groups. The interaction was not significant F (1,68)=.127, p >.05. These results demonstrate that there was no difference between the groups, at each year level, in syntactic awareness after training.

In addition to the oral correction task, all groups completed a written test of syntactic awareness, constructed by the researcher, based on the content of the training programme. Since the content was different for each year level, two separate tests were constructed (see Appendix B). Means and standard deviations for the written syntactic awareness test are displayed in Table 4.3.

Table 4.3

Mean Scores for All Groups in the Written Syntactic Awareness Test at Posttest

Grade	Group	Mean	SD
1	E	11.12	3.60
1	C	9.58	3.58
2	E	17.31	3.14
2	C	11.95	3.47

T-tests carried out on the posttest results of the written syntactic awareness task showed no significant difference between the Year 1 groups t (32) = 1.25, $p>.05$. However, a significant difference was recorded between the two Year 2 groups t (36) = 4.99, $p<.001$. These results indicate that while there were no differences between the experimental and control groups, of either grade, in oral syntactic awareness, there was a significant difference between the Year 2 groups in written syntactic awareness. The Year 2 experimental group had significantly higher scores for written syntactic awareness than the Year 2 control group.

4.2 RESEARCH QUESTION 2: DIFFERENCES BETWEEN THE GROUPS IN READING

Is there a significant difference in reading performance between Year 1 and Year 2 children trained in syntactic awareness and those who receive no specific training in syntactic awareness?

After the results of the posttest scores in syntactic awareness were compared, the posttest scores in the tests of reading performance were analysed in order to establish whether training in syntactic awareness resulted in differences in levels of reading performance.

As has been explained in the previous chapter, all children in Year 1 and Year 2 were pretested in reading performance (Neale,1988) and matched on their scores. Year 1 children were also pretested in two tests of word recognition (Clay,1979; Andrews;1969) the results of which were combined to form a composite score. The means and standard deviations for all reading pretests, are shown in Table 4.4. This table also contains the percentile ranks, as published in the test manual, for the mean scores of each group in the accuracy and comprehension sections of the Neale Analysis. These tests were normed in November and the subjects in this study were pretested in August. In addition, the percentile ranks cover an age range of 6;0 to 6;11 years for the Year 1 groups and 7;0 to 7;11 years for the Year 2 groups. The mean ages of the groups tested here (see Table 3.1) were at the lower end of this age range. Since the Ready-to-Read-Word-Test and St. Lucia tests are represented as a composite score, there are no appropriate norms available for comparison.

Nevertheless, the percentile ranks shown in Table 4.4 indicate that, at pretest, the Year 2 groups were achieving average and above average levels in reading performance, but the Year 1 groups were in the low average to below average range.

Table 4.4

Mean Scores and Percentile Ranks for Reading Tests at Pretest

Test	Grade	Group	Mean	SD	Percentile Rank
Neale	1	E	4.35	7.67	27
Accuracy	1	C	3.41	5.16	27
	2	E	30.70	14.60	60
	2	C	31.90	13.70	62
Neale	1	E	1.82	2.16	35
Comp.	1	C	2.41	3.02	35
	2	E	11.74	5.34	82
	2	C	11.68	4.96	82
RTRWT	1	E	8.50	10.20	
St Lucia	1	C	7.29	7.49	

RTRWT = Ready-to-Read-Word-Test

Since there were different reading tests used at each Year level, t-tests were carried out to determine whether differences existed between the groups at pretest. The results indicated there were no significant differences between the two Year 1 groups in either the Neale Accuracy test, t (32) = 0.42, p>.05, or the Neale Comprehension, t (32) = -0.61, p>.05. An analysis of the Ready-to-Read-Word-Test and St Lucia composite scores also revealed no significant differences between the groups, t (32) = 0.38, p>.05. Similar tests undertaken with the two Year 2 groups revealed no differences on either Neale Accuracy, t (36) = -0.25, p>.05, or Neale Comprehension, t (36) = 0.03, p>.05, at pretest. These results show that the experimental and control groups at each year level were accurately matched in levels of reading ability before the commencement of the training programme.

Immediately following the completion of the 10-week training programme, all groups were posttested in reading performance with alternate forms of the same tests used at pretest. The means and standard deviations for the posttest scores are displayed in Table 4.5. The percentile ranks for the mean scores at posttest indicated that the ranking for each Year 1 group in the Neale tests of Accuracy and Comprehension increased from those at pretest. Both Year 2 groups improved their ranking in the Neale Accuracy but not in the Neale Comprehension where they recorded a lower percentile rank than at pretest, although the mean scores increased slightly.

Table 4.5

Mean Scores and Percentile Ranks for Reading Tests at Posttest

Test	Grade	Group	Means	SD	Percentile Rank
Neale	1	E	8.41	9.52	32
Accuracy	1	C	8.82	8.64	33
	2	E	37.00	16.85	71
	2	C	39.52	18.16	76
Neale	1	E	3.00	3.18	43
Comp.	1	C	3.88	3.37	53
	2	E	12.47	5.50	73
	2	C	12.75	5.35	80
RTRWT	1	E	16.75	12.53	
St Lucia	1	C	17.64	10.55	

RTRWT = Ready-to-Read-Word-Test

T-tests carried out on the Year 1 reading scores at posttest revealed no significant differences between the experimental and control groups in the Neale Accuracy, t (32) = -0.13, p>.05, or Comprehension tests t (32) = -0.78, p>.05. In addition, there were no differences between the two groups at posttest in word recognition as measured by the Ready-to-Read-Word-Test and St Lucia tests, t (32) = -0.22, p>.05.

Similar results were obtained for the Year 2 groups. There were no significant differences between the experimental and control groups in the Neale Accuracy, t (36) = -0.44, p>.05, or Comprehension tests, t (36) = -0.29, p>.05 at posttest. The results for Research Question 2 indicated that there were no differences between the experimental and control groups, of either grade, in levels of reading performance after training in syntactic awareness.

The results reported for Research Questions 1 and 2 show that while there were no differences between the experimental and control groups, of either grade, in levels of syntactic awareness (as measured by the oral correction task) and reading performance at pretest, there were also no differences between the groups at posttest, after training in syntactic awareness. There were, however, differences between the Year 2 groups in levels of syntactic awareness as measured by the written test.

4.3 RESEARCH QUESTION 3: INCREASE IN SYNTACTIC AWARENESS

(a) Do Year 1 and Year 2 children trained in syntactic awareness demonstrate significantly higher levels of syntactic awareness after training?
(b) Do Year 1 and Year 2 children not specifically trained in syntactic awareness demonstrate significantly higher levels of syntactic awareness without training?

Research Question 3 examined the scores for each group in syntactic awareness, before and after training, to determine whether any differences occurred. The means and standard deviations for each group in levels of syntactic awareness at pretest and posttest are presented in Table 4.6.

Table 4.6

Mean Scores for All Groups in the Oral Correction Task at Pretest and Posttest

Grade	Group	Pretest Mean	SD	Posttest Mean	SD
1	E	13.05	4.85	18.23	4.28
1	C	13.47	4.69	17.65	5.06
2	E	20.90	4.97	24.56	2.85
2	C	20.52	4.48	23.31	3.79

Paired t-tests were carried out on the pretest and posttest scores for all groups. When the pretest and posttest scores were compared, the results showed that all groups, across both year levels, improved significantly in levels of syntactic awareness. Table 4.7 shows the results of the t-tests carried out on the pretest and posttest scores.

Table 4.7

T-Test Results for the Pretest and Posttest Scores for All Groups in the Oral Correction Task

Grade	Group	N	df	t
1	E	17	16	9.05*
1	C	17	16	5.64*
2	E	19	18	5.08*
2	C	19	18	4.04*

*p<.001

These results indicated that although the two experimental groups improved significantly in their levels of syntactic awareness after training, the two control groups also improved significantly without training.

4.4 RESEARCH QUESTION 4 INCREASE IN READING

(a) Do Year 1 and Year 2 children trained in syntactic awareness demonstrate significantly higher levels of reading performance after such training?
(b) Do Year 1 and Year 2 children not specifically trained in syntactic awareness demonstrate higher levels of reading performance without training?

Research Question 4 examined the reading scores for each group at pretest and posttest to establish whether there were any differences between the groups in levels of reading performance after training in syntactic awareness.

Means and standard deviations for the pretest and posttest scores in reading performance for all groups are shown in Table 4.8.

Table 4.8

Mean Scores for all Groups in Reading Performance at Pretest and Posttest

Test	Grade	Group	Pretest Mean	SD	Posttest Mean	SD
Neale	1	E	4.35	7.67	8.41	9.52
Accuracy	1	C	3.41	5.16	8.82	8.64
	2	E	30.70	14.60	37.00	16.85
	2	C	31.90	13.70	39.52	18.16
Neale	1	E	1.82	2.16	3.00	3.18
Comp.	1	C	2.41	3.02	3.88	3.37
	2	E	11.74	5.34	12.47	5.50
	2	C	11.68	4.96	12.75	5.35
RTRWT	1	E	8.50	10.20	16.75	12.53
St Lucia	1	C	7.29	7.49	17.64	10.55

RTRWT = Ready-to-Read-Word-Test

Since the reading tests were different for each Year level t - tests were carried out on the pretest and posttest scores for each group. When these scores were compared, the results showed that the Year 1 groups, both experimental and control, improved significantly in all aspects of reading performance from pretest to posttest. This pattern of significant improvement was replicated for the Year 2 groups except in the area of reading comprehension where the experimental group did not record a significant gain. Table 4.9 illustrates the gains in reading performance for all groups.

Table 4.9

T-Test Results for the Pretest and Posttest Scores for All Groups in Reading

Test	Grade	Group	N	df	t
Neale	1	E	17	16	5.45**
Accuracy	1	C	17	16	4.04**
	2	E	19	18	5.10**
	2	C	19	18	4.71**
Neale	1	E	17	16	2.19*
Comp.	1	C	17	16	2.19*
	2	E	19	18	1.21
	2	C	19	18	2.15*
RTRWT	1	E	17	16	6.10**
St Lucia	1	C	17	16	6.76**

*p<.05 **p<.001 RTRWT = Ready-to-Read-Word-Test

These results indicate that the two experimental groups improved significantly in the various aspects of reading performance measured after training in syntactic awareness, except for the one non-significant result by the Year 2 group. Nevertheless, the two control groups also showed significant improvement in reading performance across all tests, without training.

The results for the four Research Questions show that there were no differences between the experimental and control groups in either Year 1 or Year 2 after training in syntactic awareness. There were also no differences between the groups in reading after training. However, all groups at both Year levels, improved significantly in syntactic awareness during the 10-week training period. A similar significant improvement occurred in word recognition for all groups and three of the four groups also displayed significant improvement in reading comprehension.

CHAPTER 5
DISCUSSION

This chapter begins with a re-consideration of the rationale of the present study and a summary of the findings of the research. These findings are examined in relation to other research studies and also in relation to the content of the programmes undertaken by the experimental and control groups. The influence of the curriculum on syntactic awareness is also considered.

5.1 RATIONALE OF THE STUDY

One of the underlying aims of this study was to conduct a research project in an educational setting which was natural and familiar to young children. Thus, the study was conducted in a normal school classroom with existing classes of children. The entire school population of children at the appropriate year levels was included in the study, apart from the few exceptions mentioned in Chapter 3. Great care was taken, with both the experimental and control groups, to replicate the normal classroom environment as far as possible. In addition, the experimenters who presented the lesson material to each individual group of children were all members of the school's teaching staff and were known to all the children involved in the research. The validity of using existing school staff in educational research is supported by Campbell and Stanley (1963) who commented that, "experimentation within schools must be conducted by regular staff of the schools concerned whenever possible, especially when findings are to be generalised to other classroom situations (p.21)."

5.2 SUMMARY OF THE FINDINGS OF THE STUDY

In this study, a training programme in syntactic awareness was conducted with children in their first and second years at school. Initially, all children were pretested in syntactic awareness and reading, and from these results matched pairs were assigned to experimental and control groups at each year level. Both experimental groups received a 10-week training programme in activities designed to increase and develop syntactic awareness. The two control groups received no specific syntactic training, but continued with normal classroom language-based activities throughout the same 10-week period. At the conclusion of the training study, all four groups were post-tested in syntactic awareness and reading performance with the alternate forms of the tests.

Four main research questions were addressed in this study.

1. Do Year 1 and Year 2 children trained in syntactic awareness show significantly greater improvement in syntactic awareness than children who receive no specific syntactic awareness training?

2. Is there a significant difference in reading performance between Year 1 and Year 2 children trained in syntactic awareness and those who receive no specific training in syntactic awareness?

3(a). Do Year 1 and Year 2 children trained in syntactic awareness demonstrate significantly higher levels of syntactic awareness after training?

3(b). Do Year 1 and Year 2 children not specifically trained in syntactic awareness demonstrate significantly higher levels of syntactic awareness without training?

4(a). Do Year 1 and Year 2 children trained in syntactic awareness demonstrate significantly higher levels of reading performance after such training?

4(b). Do Year 1 and Year 2 children not specifically trained in syntactic awareness demonstrate higher levels of reading performance without training?

The results for Research Question 1 showed that after posttests in syntactic awareness (oral correction task) were carried out with all groups, a significant main effect for grade was recorded with the Year 2 groups showing superior performance to the Year 1 groups. However, there were no significant differences between the experimental and control groups, in either Year 1 or Year 2, in levels of syntactic awareness. The results for the test of written syntactic awareness displayed different results at each year level. No significant difference was recorded between the Year 1 groups, but there was a significant difference between the Year 2 groups, with the experimental group exhibiting superior performance to the control group.

The second research question examined significant differences between the groups in reading performance after training in syntactic awareness. T-tests carried out on the Year 1 posttest scores in the various reading tests revealed

no differences between the groups in word recognition, reading accuracy, or reading comprehension. The results for the Year 2 groups followed a similar pattern with no differences between the experimental and control groups in reading accuracy or reading comprehension. Thus, in answer to Research Questions 1 and 2 the results showed that there were no significant differences between the experimental and control groups, of either grade, in levels of syntactic awareness and reading performance after the experimental groups had been trained in syntactic awareness. The only significant difference recorded was between the Year 2 groups in the test of written syntactic awareness, where the experimental group results were significantly higher than those of the control group.

In addition to the consideration of differences between the groups, Research Questions 3 and 4 examined increases in syntactic awareness and reading by comparisons of pretest and posttest scores for each of the four groups. Paired t-tests carried out on the pretest and posttest scores in the oral correction task showed that both the Year 1 and the Year 2 experimental groups improved significantly in their levels of syntactic awareness after training. The two control groups, however, also improved significantly in their levels of syntactic awareness without specific training. When pretest and posttest scores in reading performance were compared, both Year 1 groups improved significantly in their levels of word recognition, reading accuracy and reading comprehension. For the Year 2 groups, the results were slightly different. Both groups improved significantly in reading accuracy, but the experimental group's improvement in reading comprehension did not reach significance. Nevertheless, the control group results in reading comprehension showed a significant improvement between pretest and posttest scores.

Thus, in answer to Research Questions 3 and 4, the results indicated that while training in syntactic awareness increased levels of syntactic awareness in Year 1 and Year 2 children, a significant improvement was also evident in the children who received no specific training in syntactic awareness. When levels of reading performance were compared for all the groups, apart from one exception, i.e. the Year 2 experimental group, a similar pattern of results emerged.

5.3 INTERPRETATION OF THE FINDINGS

In this study, four main findings were recorded. Firstly, there were no differences between the experimental and control groups, of either year, in syntactic awareness after training. Secondly, there were no differences between the groups in reading performance after training. The third main finding of the study was that all the groups, both experimental and control, increased their levels of syntactic awareness during the 10-week training period. Finally, all the groups recorded a significant improvement in word recognition between pretest and posttest and three of the four groups also improved significantly in reading comprehension levels. In addition to this, as with other studies (Bowey, 1986; Pratt et al, 1984; Scholl & Ryan, 1980; Willows & Ryan, 1986) the performance of the Year 2 groups in the oral correction task was significantly better than that of the Year 1 groups. There is consistent evidence from studies such as these to show that older children perform better than younger children on syntactic awareness tasks.

The fact that there was not a significant difference between the experimental and control groups in syntactic awareness after training may be interpreted in

several ways. One interpretation may be that syntactic training with children of this age makes no appreciable difference to the development of their syntactic knowledge. This explanation suggests that children amass syntactic knowledge on their own, as it were, without specific intervention. Experience with written language may be the catalyst which stimulates the acquisition of syntactic awareness. This experience with written language may also refer to the development of the child's own writing as well as reading. It is normal for the skills of reading and writing to be taught concurrently in school programmes. Thus, as children are learning to read words, phrases and sentences, they are also learning to write them. Logically, the organisation and manipulation of their own writing would involve elements of syntactic understanding and application. The contribution which early writing, as well as early reading, makes to the development of syntactic awareness may be important. It is possible that syntactic development may be an effect of reading and writing experience.

Alternatively, the fact that there were no differences between the experimental and control groups after training, may have been influenced by the content of the training programme itself. The two experimental groups received instruction in a variety of syntactic forms. A number of previous studies which have reported significant increases in levels of syntactic awareness after training, were studies in which the definition of "syntax" was narrower that that which applied in this study. For example, the studies of Sampson et al. (1982), Weaver (1979), and White et al. (1981) involved intensive training in one particular aspect of syntactic application such as sentence anagram study, cloze procedure or word grouping techniques. After training, the various groups were posttested in tasks which replicated the training content. In other words, a "teach to the test" format was employed. In the present study, however, the

teaching of syntax was approached on a more global level and the posttest measure of syntactic awareness (oral correction task) did not relate specifically to the training content. Thus, it may be more difficult to obtain a significant result in this type of training programme where syntactic understanding is considered on a broad, rather than a specific, basis.

Thirdly, the length of the training programme itself may not have been sufficient to obtain a significant result. This seems unlikely, however, in view of the fact that there were only slight differences in the mean scores of all the groups in the oral correction task at posttest. It would be expected that if the experimental groups were moving towards a significant result over the control groups, then this direction would have been reflected in their mean scores. In point of fact, after a period of 10 weeks the mean scores were almost equal (see Table 4.6), which suggests that the length of the training period was not a contributory factor to the result. Furthermore, the length of the study was similar to that of other studies (Milton, 1990; White, Pascarella & Pflaum, 1981) where significant differences, after training, were recorded.

Finally, it may be that training in syntactic awareness did not result in a significant difference between the experimental and control groups because children in all groups were already receiving instruction in syntactic awareness through the medium of the language activities to which they were exposed during the normal course of classroom instruction. If the curriculum content emphasised syntactic development, even incidentally, then it is possible that extra training in syntactic awareness for the experimental groups might be redundant and thus not result in their levels of performance being above that of the control groups. It is also possible that the activities presented to the experimental groups may not have been sufficiently different from the control

groups' normal classroom practice to establish a significant result. The question of possible curriculum influences on the development of syntactic awareness is discussed in detail in the last section of this chapter.

It seems, therefore, that the general nature of the training programme content, coupled with the possible influence of curriculum documents, may have contributed to the lack of significant differences between the experimental and control groups after training in syntactic awareness.

The test of written syntactic awareness, based entirely on the content of the training programme, showed somewhat different results. Unlike the oral correction task, which was given at pretest and posttest, the written syntactic awareness task was given at posttest, only, since its content was based on the substance of the training programme. This written test was constructed for two reasons: firstly, to ascertain whether there were differences in syntactic awareness as measured by oral and written tasks, and secondly, as an extension of the usual testing procedure employed by the school.

The testing procedure followed by all classes, was that the children undertook a series of written tests at the end of each term, usually a 10-week period, in order to monitor individual progress in areas such as spelling, writing, sentence construction, word study and reading comprehension. Since one of the important considerations of this study was to adhere as much as possible to normal school routines, it was decided to include a written test at the end of the training period. Two different tests, one for each year level, were devised to reflect the differences in the curriculum requirements for each age. The Year 1 test (see Appendix B) included word-order restructuring, matching singular and plural nouns with pictures, choosing endings for base words, differentiating between questions and answers, selecting "naming" words and "doing" words

and correctly matching subjects and verbs. The requirements of the Year 2 test (see Appendix B) included re-arranging word-order within a sentence, correctly matching subjects and verbs, differentiating between plural "s" and possessive "s", using joining words to group ideas, using adjectives and verbs, placing full stops and question marks correctly, framing a written question, identifying nouns, verbs and adjectives within a given sentence and writing a sentence containing a noun and an adjective.

Since this test was constructed to measure syntactic awareness and not reading ability, care was taken to minimise the level of reading difficulty for all children. Each staff member was issued with a set of instructions for the administration of the test (see Appendix B). The written content of each question was read aloud to the children and each question was completed by the whole group before the next question was read. In this way, children who were poor readers were assisted with the reading content of each question without receiving assistance with the syntactic content.

When the results of the written syntactic awareness test were analysed, the mean scores for the two experimental groups were considerably higher than the mean scores for the two control groups (see Table 4.3). The differences between the Year 1 groups did not reach significance, but those between the Year 2 experimental and control groups were significant at the .001 level. The relatively higher scores of the Year 2 group may have reflected their greater syntactic understanding or their greater experience with written answers. The Year 2 control group, however, would also have had similar experience with written answers. Since the Year 1 groups were tested at the end of the school year (late November) they, too, were familiar with written assignments. Furthermore, the lessons undertaken during the training period, for both the

experimental and control groups, contained a proportionate number of oral and written activities so that both groups at each year level would have approximately equal exposure to each type of activity.

It is interesting to note that while there were no differences between the groups in syntactic awareness as measured by the oral correction task, there were differences when syntactic awareness was measured in a written form. The written test was based exclusively on the content of the training study and in this sense it could be considered to be more specific in nature than the oral correction task. Thus, it is possible that the significantly higher performance of the Year 2 experimental group for this test was influenced by a certain "teach to the test" element which was peculiar to the Year 2 programme. Some of the questions in the written syntactic awareness test for Year 2 (see Appendix B) required the children to display knowledge of specific grammatical terminology such as noun, verb and adjective. For example, the word 'verb', in itself, contains no clues as to its possible meaning or likely function within a sentence. In order to understand that a verb denotes an action within a sentence, children need specific and precise instruction. The Year 2 experimental group received such instruction as part of their training programme, but the Year 2 control group did not. Thus, in a test situation, the control group would have to guess at possible meaning, while the experimental group would be more likely to score correctly.

The subjects in the Year 1 experimental group, although exposed to the functions of verbs and nouns in the training programme, were not taught specific terminology. Their written syntactic awareness test, for example, required them to nominate 'doing' words and 'naming' words within a written sentence (see Appendix B). Clearly, these terms in themselves, suggest a possible word

function. Thus the control group in Year 1, if they needed to guess, would have been more likely to guess correctly than the control group in Year 2. This may explain why the differences between the two Year 1 groups in written syntactic awareness did not reach significance but did so for the Year 2 groups.

Although the results for the oral correction task did not show differences between the experimental and control groups in syntactic awareness after training, quite different results were obtained when the pretest and posttest scores for this task were compared (see Table 4.7). Both experimental groups improved significantly in syntactic awareness during the 10 weeks of the training period. Nevertheless, a similar result was also obtained for the two control groups who also improved significantly in syntactic awareness over the same time. While this result was somewhat unexpected, it was not without precedent. Milton (1990), in her study recorded a similar result with Year 1 children after 12 weeks of formal schooling when they were still non-readers. In her study, the experimental group, trained in syntactic awareness, showed significant gains in syntactic awareness, over 2 control groups, one of which was a no-treatment group and the other a vocabulary extension group. Nevertheless, even the children who received no training in syntactic awareness displayed increases in syntactic awareness after 12 weeks in a Year 1 classroom.

Similarly, in their study which trained learning disabled children in sentence anagram techniques, White et al. (1981) noted that although the experimental group was better than the control group at posttest in the completion of sentence anagram tasks, the control group (which received instruction in sentence study) also improved during the 8-week training period.

Milton suggested that her result may have reflected the emphasis placed on language related activities in Western Australian Year 1 classrooms. The

benefits of such activities would necessarily be available to all children in both experimental and control groups. This was also true of the present study, where all Year 1 and Year 2 children, in the course of their daily learning activities, were involved in a wide range of language related activities using curriculum documents for Western Australian schools.

When the reading results were compared for each year level, they replicated the syntactic awareness results. There were no differences between the experimental and control groups at either year level in reading performance after training in syntactic awareness. However, when the pretest and posttest scores in reading performance were compared, all groups showed a significant improvement in reading accuracy and three groups also improved significantly in reading comprehension. The Year 2 experimental group, alone, did not record a significant improvement in reading comprehension. This result may have been due to chance, or to a possible plateau effect where earlier reading gains were maintained without being extended. Both Year 1 groups also recorded a significant improvement in their levels of word recognition.

Apart from the Year 2 experimental group, the results in reading performance mirrored the results in the oral correction task There were no differences between the experimental and control groups after training, but a significant difference was recorded in the scores between pretest and posttest for both groups at each year level. This similar pattern of improvement supports the view that progress in reading and progress in syntactic awareness are connected (Bowey, 1986; Tunmer et al, 1987)). It is possible that the nature of the relationship may be reciprocal, with both reading and syntactic awareness exerting different influences at different stages of development.

Blackmore's (1991) study, for example, suggested that reading skills

influenced the development of syntactic awareness at early Year 2 level, but by the end of Year 2 syntactic awareness influenced the development of reading skills. The results of the present study are also consistent with Ehri's (1979) view that there may be an interaction between metalinguistic awareness, generally, and learning to read. They are also consistent with Donaldson's (1978) suggestion that overall language ability is stimulated by the process of learning to read, which in turn increases levels of language awareness.

The increase in reading performance which the groups displayed by the end of the training period may also have been influenced by developmental factors. In spite of the fact that the groups were matched at pretest on reading ability and syntactic awareness, such matching could not, in any way, predict individual rates of development in these areas during the remainder of the school year. Although the length of the training study was 10 weeks, it was spread over two school terms with a two-week holiday break in between. Thus, the time span between pretest and posttest was in excess of three months. It is to be expected that children would show increased rates of progress in many areas of achievement, of which syntactic awareness training may be only one factor, during this length of time.

When the percentile ranks provided by the Neale Analysis (1988) for the groups at pretest and posttest were compared, there were clear differences apparent between the Year 1 and Year 2 groups of children (see Tables 4.4 and 4.5). The Year 2 groups were in the average to above average range for their age level in reading ability at both pretest and posttest. The two Year 1 groups, however, were in the low average to below average range in both accuracy and comprehension at pretest, but at posttest had lifted their comprehension scores into the average range. Reading Accuracy remained

relatively unchanged from pretest levels.

It was clear at pretest that children in the Year 1 groups were lower achievers than children in the Year 2 groups at mid-year. It is conceivable, therefore, that their slow progress in the first half of the year may have resulted in an accelerated rate of performance in the second half of the year which may, in turn, have been reflected in their improved reading performance at posttest. However, it is difficult to sustain this view for the Year 2 groups, who were not low achievers and who, with one exception, demonstrated a similar rate of improvement from pretest to posttest in reading performance.

Correlational matrices were prepared on the posttest scores in the various reading and syntactic tasks for each of the four groups (see Appendix E). When these were examined, some clear patterns of relationships emerged. Scores in the oral correction task were significantly correlated with scores in reading accuracy for all four groups. In addition, for both Year 1 groups there was a significant relationship between their scores in the oral correction task and scores in the two tests of word recognition also administered to them. Scores in the oral correction task and reading comprehension were significantly correlated for both Year 2 groups and for the Year 1 control group, but not for the Year 1 experimental group. The relationship between the oral correction task and the written syntactic awareness task was significant for all groups except the Year 2 control group. Overall, the results were consistent with other studies which examined the relationship between oral correction tasks, word recognition and reading comprehension (Bowey, 1986; Fowler, 1988; Tunmer, 1989; Tunmer, Herriman & Nesdale, 1988). Fowler (1988) in her study with second grade children, found that while scores on a sentence judgement task were not significantly correlated with reading ability and metaphonological skill, scores on

an oral correction task were significantly correlated with these variables.

Similarly, Tunmer et al. (1988) in their longitudinal study with Year 1 and Year 2 children, found that scores on an oral correction task and the Ready-to-Read-Word-Test were significantly correlated at the end of Year 1, and the relationship between syntactic awareness and reading comprehension remained significant at the end of Year 2. Bowey (1986) in her study with children from preschool to fifth grade, found that while the rate of spontaneous corrections on an error imitation task decreased significantly from nursery school to kindergarten levels, performance on an error correction task showed significant increases with age until second grade. Both these syntactic awareness tasks were significantly correlated with reading age levels on the St Lucia Graded Word Reading Test.

The results of the present study thus confirm the existence of a relationship between syntactic awareness and reading in young children. The existence of a causal relationship, however, is still unclear. This study demonstrated a pattern in syntactic awareness levels and reading levels; as one increased over time, so did the other. Although this pattern was encouraging, there was little evidence to suggest that it was influenced by specific syntactic training. In fact, the evidence from this study suggests that improvement in syntactic awareness may occur independently without training. But, it is important to note that in this study, the teaching of reading and syntactic awareness were bounded by the constraints of particular curriculum documents. The influence of these documents on the outcome of this research must also be considered.

5.4 THE INFLUENCE OF THE CURRICULUM IN READING AND SYNTACTIC AWARENESS

The aim of this research was to examine the relationship between syntactic awareness and reading development with children in a normal school environment. An experimental design was selected as the vehicle for this study and the experimental and control groups were monitored within the normal classroom and system constraints present in school situations. One such constraint was the use of curricula. The experimental groups received intensive training in elements of syntax selected from prescribed curricula for Western Australian schools. The activities selected for the control groups, while not syntax specific, were taken from the same curricula. Thus, like the experimental groups, the control groups were not excluded from the influences which the curricula imposed. If the educational implications of the relationship between syntactic awareness and reading are to be seriously considered, then it is equally important to consider these within a normal educational setting, subjected to the normal system structures. Thus, in this study it was impossible to remove syntactic influences entirely from the activities of the control groups during the time that the experimental groups received syntactic training. The main reason for this was the nature of the curriculum documents themselves.

The main curriculum documents used in this research were heavily influenced by the Whole Language approach to teaching and learning (see Chapter 2). This approach places considerable emphasis on the integrated nature of language learning. All aspects of language (reading, writing, speaking and listening), are not considered to be separate entities learned in isolation, but rather as parts of the same whole. In this way, the Whole Language

approach to learning places all aspects of language, particularly reading and writing, within the content of all subjects across the whole curriculum.

The most recent documents for use in Western Australian schools, English Language K - 7 Syllabus (1989) and the various continua of the First Steps Developmental Programme (1992), are based on clear beliefs about how children learn. Such beliefs include an active involvement by children in the learning process, interaction with adults and peers and whole-to-part-learning. This last belief is particularly relevant to the findings of the present study.

Whole-to-part learning espouses the notion of "embeddedness". Language is embedded in a social context. Thus, individual aspects of language which are taught to children must also be considered in their own relevant context. In this way, aspects of syntax and grammar would not be isolated for specific teaching unless they had first been encountered in their natural context of speaking, reading and writing. The training programme for this study emphasised the "part" concept of whole-to-part learning. The particular aspects of syntax isolated for consideration with the experimental groups had already been encountered by the children in their normal language context. They had also been encountered by the children in the control groups. Furthermore, many of the language activities suggested by curriculum documents as relevant to this age level place particular emphasis on reading development. Many of the reading activities, in turn, focus attention directly or indirectly, on syntactic structure.

Each lesson for both experimental and control groups commenced with some kind of reading activity, often in the form of a shared book. Shared book in this context, refers to the use of a Big Book suitable for class or group reading. The children are usually arranged away from their desks, sitting on the

floor in an informal setting. The book is positioned for all the children to be able to read the enlarged text clearly. This type of activity is used to instruct children in various aspects of text. At first, the focus is usually on the meaning and sequence of events portrayed in the story, but once this is established, the focus may shift towards more abstract considerations such as characterisation, word usage and structure. This may include aspects of punctuation, arrangement of words, phonemic aspects and so on. Thus, many of the "reading" activities undertaken by the control groups in this study, focused on aspects of text which could have influenced syntactic as well as reading development (see Appendix D).

The repeated reading of text may also influence syntactic development. Several studies have demonstrated that such repeated reading improves fluency, word recognition and reading comprehension (Dowhower, 1987; Herman, 1985; Taylor, Wade & Yekovich, 1985). Adams (1990) also suggests that syntactic understanding is assisted by children reading along with a fluent model reader, or reading along with recorded tapes. Fluent readers' competent use of phrasing, pause and expression help to clarify the syntactic boundaries of text for young readers which, in turn, facilitates comprehension. Choral reading and read-a-long activities were a feature of both experimental and control group lessons during the course of this study. It is reasonable to assume that such activities may have contributed to the gains in syntactic awareness displayed by both the control groups as well as the experimental groups.

Bowey (in press) has expressed the view that most of the tasks which researchers have used to measure syntactic awareness in children may also tap other language abilities, and as such cannot be regarded as pure measures of syntactic ability. Semantic abilities, particularly, are likely to play a part in the

successful completion of syntactic awareness tasks. Bowey argues further that researchers must endeavour to construct syntactic awareness tasks which eliminate, or at least minimise, such semantic influences.

The results of the present study suggest that the isolation of syntactic awareness tasks from a semantic context would be extremely difficult, if not impossible, to achieve with young children who have already begun the formal processes of learning to read at school. Current educational practice in schools places early childhood language learning into a semantic context. It would be difficult to see how syntax could be extracted from this environment for singular consideration without actually compromising the reality of classroom instruction. Although the present study attempted to control for as many extraneous variables as possible, it endeavoured to do so without compromising the reality of classroom practice. Indeed, one of the important considerations of this research was to follow normal instructional procedures as closely as possible.

In essence, the results of this study have shown that training in syntactic awareness with children in their first two years of school, does not necessarily increase levels of syntactic awareness beyond that of children who receive no specific training. Furthermore, the pattern of results demonstrated that as levels of syntactic awareness increased over time, so, too, did reading ability. Thus, while a relationship between syntactic awareness and reading was clearly established, the nature of the relationship was not. This study does not provide clear evidence for syntactic awareness as a causal factor in reading. In fact the results suggest a reciprocal, as much as a causal, relationship between syntactic awareness and reading. Developmental factors may also play a part in the reading gains made by children of this age group, particularly when such gains are measured over relatively short time frames. Curriculum influences,

also, may play an important role. Activities which are structured to develop reading ability may also enhance and influence syntactic ability and contribute to language awareness generally.

CHAPTER 6
CONCLUSION

In this chapter implications for future research and classroom practice, as well as possible limitations of the study are examined.

6.1 IMPLICATIONS FOR FUTURE RESEARCH

The findings of the present study have raised a number of issues concerning the relationship between syntactic awareness and reading performance in young children who are beginning readers. Some of the results are consistent with the findings of other studies which have explored the nature of this relationship. This study found that syntactic awareness increases with the age of the child; a result which has been consistently supported by other studies. The correlations between syntactic awareness and various aspects of reading ability such as word recognition and comprehension, are also similar to those reported by other researchers. The improvement in syntactic awareness displayed by both the experimental and control groups, after training, supports the findings of Milton's (1990) study where similar results were reported.

While this study has replicated some of the findings of other studies, it has also raised a number of issues which require further exploration by researchers. One of these is the need for further training studies to be carried out both with children who are non-readers and with children who have begun the formal processes of learning to read. The number of available training studies which have explored the relationship between syntactic awareness and reading is very few. Those which do exist have tended to focus on a very specific aspect of

syntactic awareness training rather than the more open consideration of syntactic development generally. Training in one or two specific aspects of syntactic awareness may not be enough to predict the development of syntactic understanding at the level required to process text, for example.

The possible reciprocal nature of syntactic awareness and reading ability also requires further exploration. Does exposure to the various aspects of reading instruction stimulate the development of syntactic awareness in young children, or is it syntactic awareness which stimulates understanding of text? Alternatively, do both of these factors interact with one another in different ways, at different stages of reading development? The difference between children who are early readers and children who are non-readers is also important to establish. Milton's study, for example, examined the development of syntactic awareness with children who were non-readers. These children, however, were being exposed to language-related activities in their classrooms at the same time that they were undertaking training in syntactic awareness. It is conceivable that this exposure may have contributed to their increased syntactic awareness as Milton herself acknowledges. The effect of language-related activities in the environment of Pre-Primary education may also be a contributory factor in the syntactic development of non-readers.

The influences which curricula impose upon the development of syntactic awareness must also be considered. This research study noted the possible influences of a curriculum with a Whole Language focus on the development of syntactic awareness. Whole Language is essentially a derivative of top-down reading theory. Top-down reading models work from the 'top' levels of meaning processing to the 'bottom' levels of letters and words. Curricula which adopt a top-down approach to the teaching of reading focus, primarily, on the higher

level processing skills of syntactic and semantic understanding. The emphasis on these higher level processing skills can result in relatively little attention being directed towards letters and words. The fact that syntactic awareness is emphasised both implicitly and explicitly in Whole Language teaching may account for the growth in syntactic awareness shown by all groups in this study.

Conversely, it is possible to speculate that different results could have been recorded by using curricula which approached the teaching of reading differently. The use of curricula which represented bottom-up models of reading, for example, may have produced quite different results in a study such as the present. It is likely that reading instruction based on bottom-up models of reading would emphasise lower level processing skills (letters, sounds and words) before moving to the higher processing levels of syntax and semantics. Just as Whole Language teaching embraces a whole-part-whole philosophy, bottom-up theory would suggest a part-to-whole teaching progression. In the case of early readers, it is conceivable that syntactic development (a higher level skill) would receive emphasis later in the learning process than under a Whole Language approach. Further research studies are needed to examine the influences of other curricula with different philosophical underpinnings, in order to determine whether the development of syntactic awareness is influenced by the nature of classroom teaching practice.

6.2 LIMITATIONS OF THE STUDY

The sample of children used in this research study was a convenience sample of Year 1 and Year 2 children taken from one school environment. It may not be possible to generalise the findings of the present study to other school populations where different cultural and socio-economic factors may

produce different results. However, this study did involve the whole school population of children at the appropriate year levels with the exception of those from non-English speaking backgrounds and those with hearing difficulties. Similarly, the influence of curricula on the development of syntactic awareness was considered in the light of those which were in use in Western Australian schools and which adopted a Whole Language approach to early language instruction. It is possible that different results might be produced in situations where curricula with different philosophies were in use. Thus, curriculum influences on the development of syntactic awareness can only be considered relevant, from the findings of this study, for other Whole Language classrooms.

In the present study, time constraints did not allow for the experimental and control groups to be matched on cognitive variables such as verbal intelligence, in addition to their matching on syntactic awareness and reading ability. It may be that cognitive abilities are also important in the development of syntactic awareness.

6.3 IMPLICATIONS FOR CLASSROOM PRACTICE

Research in phonological awareness during the past decade has amassed a wealth of evidence which shows that specific teaching of phonological awareness in early reading programmes assists children in their reading development. At the present time, it appears that there is no definitive research evidence to support the recommendation that specific instruction in syntactic awareness will enhance reading progress. It may be that certain classroom reading practices are sufficient, in themselves, to assist early readers' syntactic development. If this is so, it is important that teachers be able to identify such practices for the benefit of their own teaching.

The present study suggests that while some Western Australian curriculum documents specify aspects of syntax to be taught at particular grade levels, other aspects of syntactic teaching may be contained within a number of activities which emphasise reading. It is likely that many teachers, in selecting such activities to assist children in their reading, may be unaware that they may also benefit syntactic awareness. If teachers are able to identify those activities which foster syntactic awareness as well as reading skill, then such activities may be consciously selected for classroom instruction.

While the findings of this study do not provide evidence for the existence of a causal relationship between syntactic awareness and reading ability, they, nevertheless, support many of the findings reported by other studies in this area. This study provides further evidence for the existence of a relationship between performance on syntactic awareness tasks and reading ability, although it does not specify the nature of that relationship. It also reinforces other research studies which have shown that syntactic awareness increases with the age of the child, at least up to about the second grade level. All of these findings suggest that it is important for classroom teachers to be aware of the established links between syntactic awareness and reading, and the results of the present study have demonstrated that it may be appropriate for classroom teachers to consciously select those reading activities which incidentally, also contribute towards syntactic knowledge and understanding.

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APPENDIX A

ITEMS IN THE ORAL CORRECTION TASK

FORM A

FORM B

APPENDIX A: ORAL CORRECTION TASK FORM A

Practice Items-Morpheme changes

(a) It is Jim book.

(b) Bruce saw cat.

Test Items-Morpheme changes

1.Andrew drink juice every day.

2.Sally make mud pies.

3.Sandra is paint a picture.

4.Susan are sucking a lolly.

5.Yesterday, John bump his head.

6.Yesterday, Sue cook a chicken.

7.It is Jack bike.

8.Mary dog was lost.

9.Girl painted a picture.

10.The boy kicked ball.

11.Six girl ran a race.

12.Tom has two kitten.

Practice Items- Word Order Changes

(a) Ate the biscuit Sally.

(b) Lady the sang a song.

Test Items- Word Order Changes

1.Patted Bill the dog.

2.Wrote Peter his name.

3.Susan the bike rode.

4.Tim the juice drank.

5.Kicked his ball Stephen.

6.Chased the cat Jim.

7.Teacher the read a story.

8.The cat chased bird the.

9.His daddy has a car blue.

10.A lady pretty lives next door.

11.Dad driving is the car.

12.Susan baking is some cakes.

Items of Increased Difficulty

1.Bill is more smaller than Bob.

2.Where does this goes?

3.I know what them are.

4.We haven't got some ice-cream.

5.He cleaned them shoes.

6.What the girls are doing?

APPENDIX A: ORAL CORRECTION TASK FORM B

Practice Items- Morpheme Changes

(a) It is Bill cat.

(b) Dad saw dog.

Test Items- Morpheme Changes

1.Jim eat cake every day.

2.Mum make little pies.

3.Susan is ride a bike.

4.Jack are chasing the cat.

5.Yesterday Tim kick a ball.

6.Yesterday Dad paint the door.

7.It is Sally doll.

8.Bill bike was lost.

9.Boy read a story.

10.The girl chased dog.

11.Three girl played ball.

12.Andrew has six dog.

Practice Items- Word Order Changes

(a) Drank the juice Tom.

(b) Man the read a book.

Test Items- Word Order Changes

1.Jumped Tom the fence.

2.Chased Sue the dog.

3.Bill the ball kicked.

4.Peter the cake ate.

5.Drove his car Dad.

6.Cooked the dinner Mum.

7.Lady the baked some cakes.

8.The teacher painted picture the.

9.Her Mum has a dress red.

10.A cat black lives next door.

11.Mum cooking is the tea.

12.Bill reading is some books.

Items of Increased Difficulty

1.Jack is more bigger than Bill.

2.What do this mean?

3.We know where them go.

4.John hasn't got much friends.

5.He read them books.

6.Where the boys are going?

APPENDIX B

COPIES OF TESTS AND INSTRUCTIONS FOR THE TESTS OF WRITTEN SYNTACTIC AWARENESS

APPENDIX B: COPIES OF TESTS AND INSTRUCTIONS FOR WRITTEN TESTS OF SYNTACTIC AWARENESS

Test Instructions : Year 1

Question 1 Read the words through with the children.
Instruction: "Write the words the right way to make sense."

Question 2 Point to the pictures one by one.
Read the words under the pictures aloud.
Instruction: "Join the word to the picture which tells about it."

Question 3 Read both lists of words aloud.
Instruction: "Join a word on one side to the word on the other side which matches it."

Question 4 Read the word 'kick' together.
Instruction: "Make a new word by putting an ending on 'kick'."

Question 5 Read the two sentences in the box.
Instruction: "Put a line under the sentence which is asking a question."

Question 6 Read the words in the box together.
Instruction: "Put a line under the 'doing' word in the box."

Question 7 Read the words in the box together.
Instruction: "Put a line under the 'naming' word."

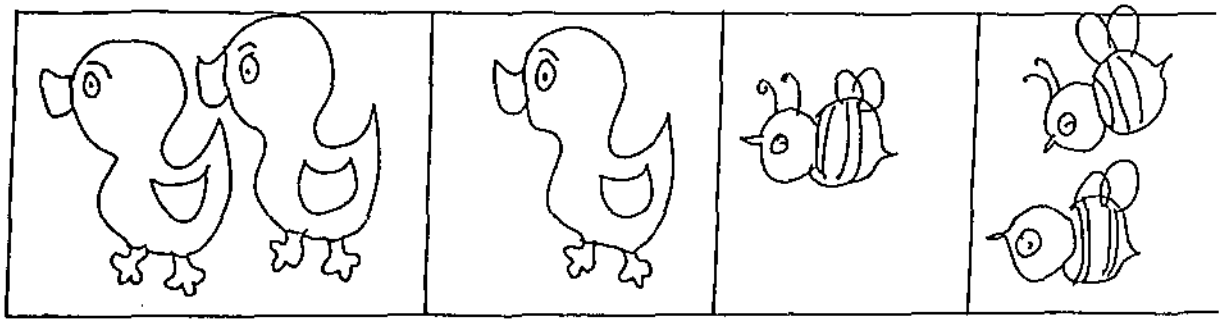
Question 8 Read the whole sentence together.
Point to the two words in the bracket.
Instruction: "Put a line under the word which sounds right in the sentence."

N.B. Instructions may be repeated if necessary for clarification, but no further explanations may be given.

Name _____ Year 1:

1. see cat I can a

_____

2. 

duck bees ducks bee

3.

jump	skipped
skip	played
hop	jumped
hlay	hopped

4. kick _____

5.

Where is your book?
I left it at home.

6. apple run table boy

7. elephant hop see run

8. One bear (play. plays) ball.

Test Instructions : Year 2

Question 1 Read the words with the children once.
Instruction: "I want you to write the words in a sentence that makes sense."

Question 2 Read the sentence through with children once.
Instruction: "You need to add something to one word so that the sentence sounds right."

Question 3 Read the sentences in the box through once aloud.
Instruction : "Underline the sentence which is written properly to tell about John's cat."

Question 4 Read the sentences through once.
Instruction: "Use a joining word to make the two little sentences into one sentence."

Question 5 Point to the word cat. Point out that there is a space in front of it and one after.
Instruction : "In the first space write a word which describes a cat. In the

last space write a word which tells something a cat can do."

Question 6 Read the whole passage through with the children.

Instruction : "At the end of each sentence there is a space. In the space put either a full stop or a question mark, which ever you think is right."

Question 7 Instruction : "In the two empty lines I want you to write a sentence which asks a question."

Question 8 Read the sentence through once.

Instruction : "Underline the words in the sentence which are nouns."

Question 9 Read the sentence through once.

Instruction :"Underline the words in the sentence which are adjectives."

Question 10 Instruction :"Write a sentence which has a noun and an adjective in it. Underline the noun and the adjective."

Name: Year 2: Written Syntactic Awareness

1. my friend I see to went

2. The boys were play football

3.

Johns cat was black.
John's cat was black.

4. It started to rain. _____ I put on my raincoat.

5. _____ cat _____

6. " Where is your schoolbag__ " asked Mum__ " I don't know__ replied Janet__ " Did I put it on the table__ " " No," said Mum__ " It isn't there__ "

7. _____

8. John put the apples on the table.

9. There was a large hole in my red jumper.

10. _____

_____

_____

APPENDIX C

CONTENT OF THE TRAINING PROGRAMME AND WORKSHEET SAMPLES

YEAR 1 TRAINING PROGRAMME

WEEK 1. Lesson 1.

Introductory Activity: Big Book reading - "Sing a Song".
Teacher reads each page aloud. Children repeat.

Lesson Content: Open Big Book at any page. Ask children to say what they can see in the pictures. Give answers in sentence form using the pattern "I can see. . ."
Transcribe sentences on to cards. Read together.

Conclusion: Draw a picture of something you can see now.

Lesson 2.

Introductory Activity: Big Book as for Lesson 1. Read story together.
Read "I see" sentences from yesterday.

Lesson Content: Move cards around to change order. Read new order together. Cut sentence strips into phrase units e.g "I see" . . . "a cat". Mix and match to make new sentences.

Conclusion Divide children into small groups. Each group cuts phrase units into word units. Match words to make whole sentences again.

Lesson 3.

Introductory Activity: Big Book reading as for Lessons 1 and 2. Reading of chart with "I see. . . " sentences on it. Whole group reading.

Lesson Content: Work in groups as per Lesson 2. Re-arrange word cards into sentence units. Individual children read sentences aloud to the whole group. Discuss whether each sentence "sounds right".

Conclusion: Teacher arranges some sentences into an order which does not make sense. Children suggest ways to change the word order so that the sentence does make sense.

WEEK 2. Lesson 4.

Introductory Activity: Sing song "I'm a Peanut." Follow words on chart. Sing together.

Lesson Content: Revise procedure for "I see" sentences. Read as whole sentence, then as phrase units, then as single word units. Individual children arrange mixed up words into proper sentences.

Conclusion: Give single word cards to individual children standing in a line. Ask children to re-arrange their places in the line so that the words make a sensible sentence.

Lesson 5.

Introductory Activity: Sing song as per Lesson 4. Follow words from chart. Introduce actions to fit words.

Lesson Content: Ask children to give a sentence, orally, about something which they have done that morning. Write 1 or 2 sentences on whiteboard. Re-write sentences in different word order on cards. Is the sentence the same? Why not? Re-arrange sentences to match those on whiteboard.

Conclusion: Introduce puppet who gets words all mixed up. Puppet says what he has been doing that morning (incorrect word order).

Children help puppet to say his sentences correctly.

Lesson 6.

Introductory Activity: Sing, read and do actions for "I'm a Peanut."

Lesson Content: Show puppet from yesterday. Correct several sentences orally which the puppet says incorrectly.

Conclusion: Show children the worksheet about the cat and the dog. Ask them to change the words so the sentences about the animals make sense. Re-write the sentences on the lines provided. Read the corrected sentences aloud to teacher.

WEEK 3. Lesson 7.

Introductory Activity: Road Safety Chant. Read line by line for children. Children repeat each line. Read through whole chant together.

Lesson Content: Find the words in the chant which mean more that one (cars, bicycles, buses, trains). Ask children what the words would be if there was only one. Make a list of the singular form and compare with the plural. What are the differences between the words?

Conclusion: Show pictures of different animals. Say the name of the animal if there is one and if there are many (cat, cats). Ask children to give examples of other singular and plural words.

Lesson 8.

Introductory Activity: Read through Road Safety Chant together. Add actions to the words.

Lesson Content: Revise plural words in the Chant. Individual children give the singular version. Write the singular and plural pairs on cards. Show animal pictures from previous lesson. Write singular and plural versions for these. Mix up the cards and ask individuals to match the pairs stating whether the word means "one" or "more than one."

Conclusion: In exercise book write the word "cat" and draw a picture of one cat. Write "cats" and draw more than one.

Lesson 9.

Introductory Activity: Read Road Safety Chant with actions as a group.

Lesson Content: Revise plural words in poem. Who can give other words which mean more that one? (List suggestions on board). Who can give a word which means only one? (List suggestions).

Conclusion: Complete the written worksheet matching singular and plural words with appropriate picture.

WEEK 4. Lesson 10.

Introductory Activity: Read Big Book "Boo-Hoo" to children. Children read book together in a repeated reading.

Lesson Content: Ask children to find all the words in the story which end in ed.. List the words on whiteboard. Ask the children to read the word when the ending is covered. Make up a rule for when the ending ed is used.

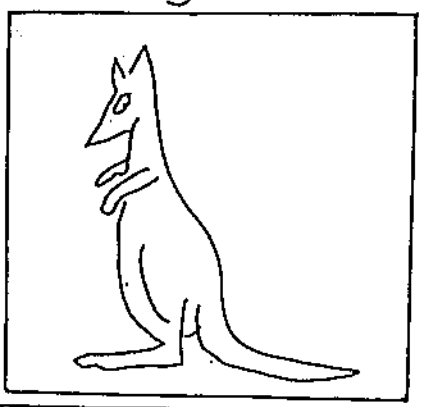
Without ed = happening now,

With ed = has happened before.

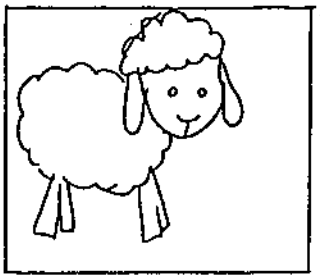
Conclusion: Write "I jumped" in activity book. Draw picture.

Worksheet : Lesson 9

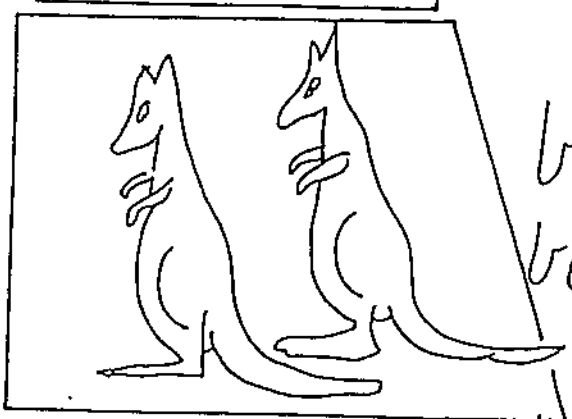
My name is _____

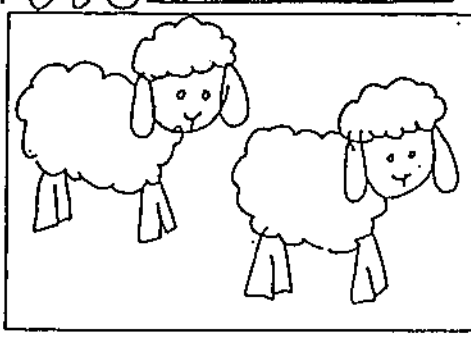


kangaroo



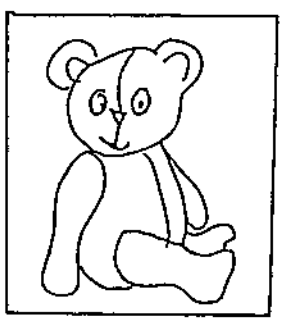
kangaroos





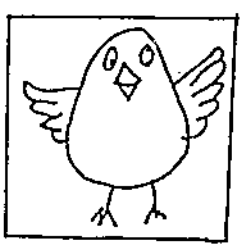
bear

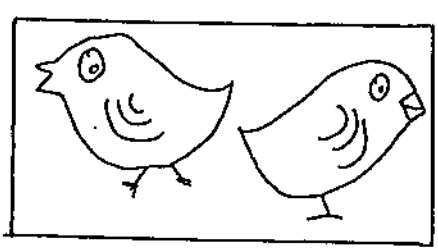
bears

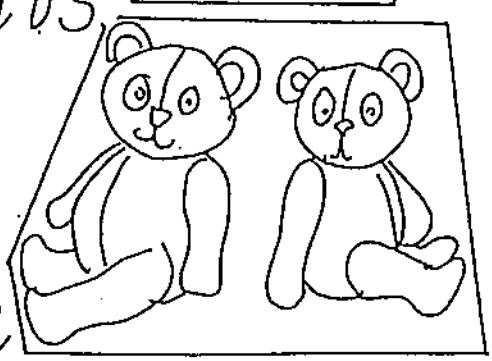


lamb

lambs







chick

chicks

Lesson 11.

Introductory Activity: Read Big Book "Boo-Hoo" as a group. Revise ed words from previous lesson. Read list together.

Lesson Content: Place word pairs together (jump, jumped etc). Ask children to nominate the word which means the action is happening now. Nominate the word which means the action has already happened. Mix all the word cards and ask individual children to sort into pairs which go together. Give reasons for your choices.

Conclusion: Write one word with an ed ending and draw a picture about it.

Lesson 12.

Introductory Activity: Read story "Boo-Hoo" together. Individual children select a word from the book with an ed ending.

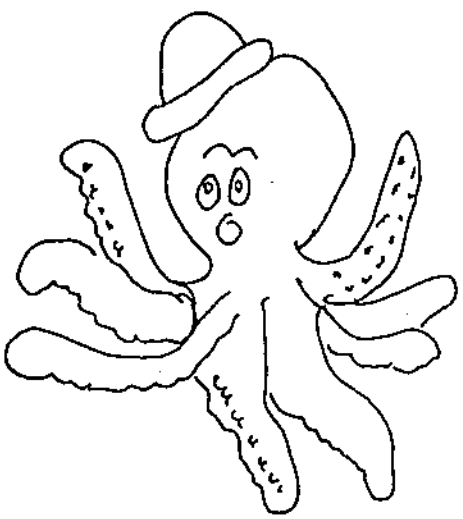
Lesson Content: Read the list of ed words made in previous lessons. Ask individual children to explain the difference between jump and jumped. Repeat with other word pairs. Play the matching game with the word pairs.

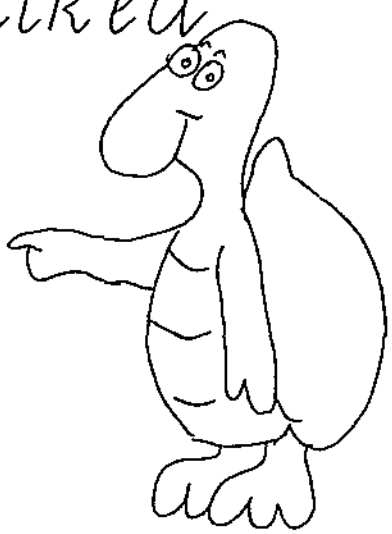
Conclusion: Complete the worksheet matching present tense and past tense pairs of words.

Name: _____ Worksheet: Lesson 12

Match the pairs of words.

jump	hopped
walk	played
play	talked
hop	looked
talk	stopped
kick	kicked
stop	jumped
look	walked





WEEK 5. Lesson 13.

Introductory Activity: Read story "Wallaby, Wallaby" aloud to children. Children read through with teacher on second reading.

Lesson Content: Select individual children to read one sentence each from the story. Tell children they are going to help to make a Big Book like this one together. Ask for suggestions about the content (zoo book, farm, school, birthdays etc). When topic is selected make a list of possible characters e.g, lion, tiger, camel, elephant etc. Choose one character to illustrate the story pattern.

"Tiger, Tiger, what do you see?

"I see a lion looking at me." Add others to continue the pattern.

Conclusion: Draw one of the characters in your workbook.

Lesson 14.

Introductory Activity: Read "Wallaby, Wallaby" from previous lesson together. Read stories suggested at previous lesson.

Lesson Content: Add more ideas to continue the story. Read each story aloud as it is transcribed. Show children that each story has a question and an answer. Point out the question mark and explain its purpose.

Conclusion: Select one character from the story and complete the missing words in the sentences on the worksheet.

Lesson 15.

Introductory Activity: Read "Wallaby,Wallaby" as a group together. Read own story patterns made at previous lessons.

Lesson Content: Select individual children to read a page of the class book. Ask individual children to read the question part of the story only. Repeat for the answer part. Refer to the function of the question mark.

Conclusion: Each child makes a large coloured drawing to illustrate one part of the book. Glue illustrations into book and place in class library for independent reading.

WEEK 6. Lesson 16.

Introductory Activity: Read the Big Book "Sing a Song." Repeat after teacher.

Lesson Content: Discuss all the things which the mother and father bear did for the little bears in the story. Express as a sentence. Teacher scribes each sentence.

"The bear reads a book."

Change the subject of each sentence to the plural form.

"The bears reads the book."

Ask the children if the sentence sounds right. What needs to be changed? Change the verb to "read."

Conclusion: Change the subject and verb for the other sentences given by the children. Read each new sentence together.

Lesson 17.

Introductory Activity: Read "Sing a Song" from previous lesson.
Read sentence cards form previous lesson with singular and plural subjects and verbs.

Lesson Content: Cut sentence strips into individual word units. Ask children to re-make sentences matching subjects and verbs correctly. Read each sentence aloud to see if it "sounds right."

Conclusion: Complete worksheet choosing the correct verb to match the subject.
The bear (read, reads) a book.

Lesson 18

Introductory Activity: Read Big Book "What Can You See" from last week.
Read class made book also.

Lesson Content: Discuss all the things the animals were doing in the story.
Find an action word for each animal ending with "ing".
e.g. kangaroo - jumping, crocodile - smiling etc.
Discuss what the word would say without the "ing".
Revise flash cards with words with ed endings taken earlier. Add "ing" to each base word and write whole pattern (jump, jumped, jumping)

Activity; Write pattern jump, jumped, jumping and illustrate.

WEEK 7 Lesson 19

Introductory Activity: Read Big Book "Hairy Bear." Teacher reads aloud and then children.

Lesson Content: Ask children to think of words which describe a bear (large, furry, brown etc). Make a list on a "describing" chart. Add "bears" card and make different phrases. Big bears; furry bears; brown bears. Each child reads one phrase individually.

Conclusion: Choose one phrase to write in activity book. Illustrate the phrase.

Lesson 20

Introductory Activity: Revise "Hairy Bear." Read through describing phrases from previous lesson together.

Lesson Content: Add "doing" chart. What can bears do? (climb, run etc) Put all charts together to make simple sentences.
e.g. Furry bears climb.
Make as many combinations of different sentences as possible from children's suggestions. Write them on whiteboard.

Conclusion: Divide into groups and each member of each group has a turn to make a sentence combination.

Lesson 21

Introductory Activity:	Revise "Hairy Bear." Revise whiteboard sentences and sentence charts.
Lesson Content:	Each child chooses a sentence to read individually. Choose a sentence to write and illustrate in activity book.
Conclusion:	Cut up charts into individual words and children mix and match words to put back into sentences.

WEEK 8 Lesson 22

Introductory Activity;	Read Big Book "Yes Ma'am" aloud to children.
Lesson Content:	Discuss format of story with children i.e. a conversation between two people in a question and answer format. Read story through again with the teacher asking the questions and the children reading the replies. Point out that the questions have a question mark at the end of the sentence and the answers have a full stop.
Conclusion:	Divide into pairs. Ask your partner a question which you must answer (take turns). Report back to the group on the kinds of questions asked.

Lesson 23

Introductory Activity: Read "Yes Ma'am" to group. Revise concepts of questions, answers and question marks.

Lesson Content: Read lists of questions which children gave at previous lesson. Select one child to read a question from the list and another child to give an answer. Ask each time "Who asked the Question? Who answered the question?

Conclusion: Write a simple question/answer format as a whole group structured activity.

What is your name?

My name is . . . . . .

Lesson 24

Introductory Activity: Read "Yes Ma'am" in two parts: one group reads the questions and the other group the answers.

Lesson Content: Revise question mark and full stop.

Revise difference between asking (question) and replying (answer).

Activity: Written worksheet. Select which of two sentences is the question and which is the answer. Indicate the question by circling or underlining.

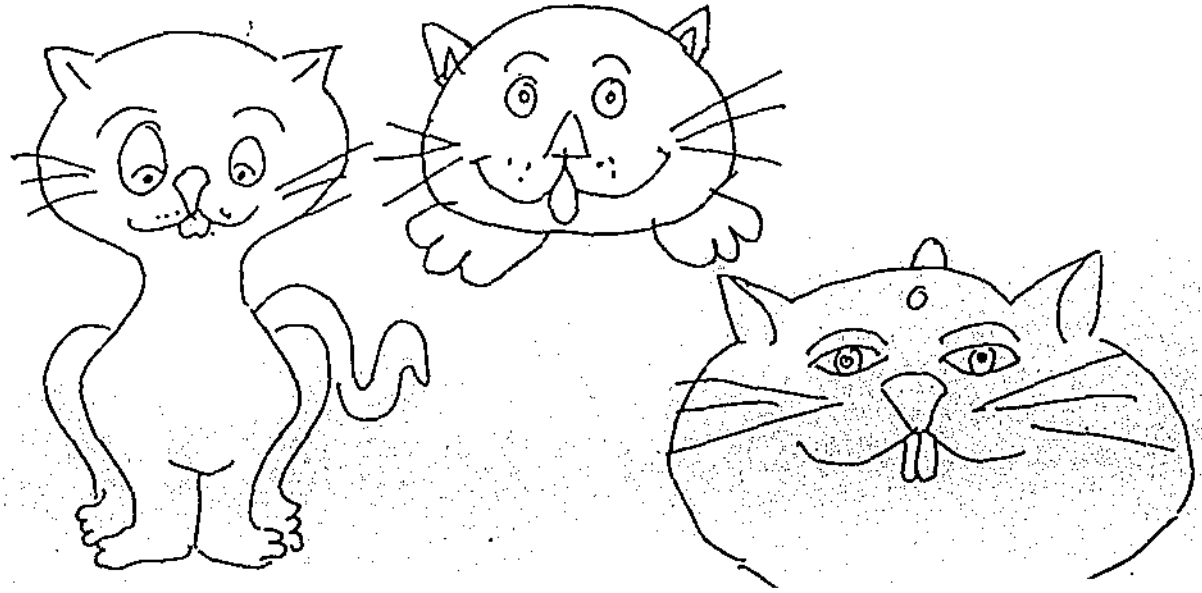
Name: _____ Worksheet : Lesson 24

1. What is your name ?
2. My name is John.

1. How old are you ?
2. I am six.

1. Do you have a pet ?
2. Yes, I have a cat.

1. What colour is it ?
2. It's black and white.



WEEK 9 Lesson 25

Introductory Activity: Read Big Book "Mrs Wishy-Washy."

Lesson Content: Look at each page and see if you can find words which are the names of things. Write the words on the whiteboard. Sort the words into categories.
Which are the names of people?
Which are the names of animals?
Which are the names of things?

Conclusion: Pick out one of the naming words from the list and write the word and draw a picture about it.

Lesson 26

Introductory Activity: Read "Mrs Wishy-Washy" as a group.
Revise the naming word charts from previous lesson.

Lesson Content: Read the story through again and this time isolate the "doing" words. List the words. Make another list of things that children can do. Write the list on a chart.

Conclusion: Write a sentence about something you can do.
Give a structured sentence beginning "I can. . ."
Draw a picture about the sentence.

Lesson 27

Introductory Activity: Read "Mrs Wishy-Washy"

Lesson Content: Revise lists of "naming" and "doing" words.

Conclusion: Sentence worksheet.

Read each sentence through with children. Ask them to isolate a particular word in each sentence.

Sentence 1: The word telling the person's name.

" 2: " " " the name of a thing.

" 3: " " " what the pig did.

" 4: " " " the animal's name.

" 5: " " " what the cow did.

WEEK 10 Lesson 28

Introductory Activity: Read through Big Book "Three Little Ducks."

Lesson Content: Chain Writing.

Make sentences about the events portrayed in the story using the following headings;

Describing Word	Person	Doing Word
e.g. hungry	ducks	eat

Make lists for each category and write whole sentences on sentences strips including the full stop. Cut the strips into words.

Conclusion: Ask individual children to hold a word card each. Change the order of the children to make new sentence combinations.

Lesson 29

Introductory Activity; Read "Three Little Ducks" through together.

Lesson Content: Revise word lists and sentence strips from previous lesson. Cut up and re-arrange the word order to make new sentences. Keep one sentence in the strip without cutting into words.

Conclusion: Ask the children to change the order of the words in the last sentence and write it in a different way

Lesson 30

Written syntactic awareness test for all groups.

YEAR 2 TRAINING PROGRAMME

WEEK 1	Lesson 1.
Introductory Activity:	Read Big Book "When the King Rides By."
	Teacher reads first; children join in chorus.
Lesson Content:	Record sentences in the story which tell about the King.
	Read the sentences together.
	Cover one word in each sentence. Does it make sense?
	Why? Why not?
	What does this tell you about a sentence?
Conclusion:	Write an individual sentence about the King.
	Lesson 2
Introductory Activity:	Read together "When the King Rides by."
	Choral reading by whole group. Add actions.
Lesson Content:	Read through sentences given in previous lesson.
	Refer children to sentence strips made from original sentences. Do these make sense? Why?
	Cover one or more words in each sentence. Read through together. Does the sentence still make sense?
Conclusion:	Work with a partner and take turns in covering different words in each sentence. Try to make sure that each change still results in a sensible sentence.

Lesson 3

Introductory Activity: Read through Big Book as for previous lessons. Add actions where appropriate. Choose individual children to read a favourite part.

Lesson Content: Revise sentence strips from previous lesson. Ask individual children to show how to change the sentence into one which does make sense. Change another way into a sentence which does not make sense. Show ways of changing word order to make sentences and non-sentences.

Conclusion: Write a sentence which does not make sense. Give reasons why it is not a sentence.

WEEK 2. Lesson 4

Introductory Activity: Read through chant "Can You Tell Me" on prepared chart. Teacher reads first and children repeat.

Lesson Content: Read chant through again and identify all the activity words. Ask children to substitute a different word for each activity word. Read chant through using substitute words and again using original form.

Conclusion: Work in small groups and substitute different activity words for each verse. Read new version to the group. Teacher records each substitution on a separate card.

Name: Worksheet: Lesson 6

Finish the pattern.

Can you tell me,
Can you tell me.
What the _____ ___ doing?
They _____ _____
They _____ _____
So I will _____ too.

Draw yourself and show what you are doing.

Lesson 5

Introductory Activity:	Read verses of chant form previous lesson (original version plus new versions generated from group).
Lesson Content:	Cover is and are before each ing word in original chant. What happens? Does it sound right? Point out rule - ing words can't stand alone but need helping words like is, are, was, were, etc.
Conclusion:	Write a sentence using is, are, was, were, plus an ing word e.g The boys were playing football. Draw a picture to illustrate the meaning of the sentence.

Lesson 6

Introductory Activity:	Read chant patterns (all verses).
Lesson Content:	Revise the little words needed to help words with an ing ending. Read a couple of chant verses substituting were for are. Does the sentence still make sense?
Conclusion:	Do the worksheet activity and complete the sentence pattern to make a new verse for the chant. Put the verses together to make a class book.

WEEK 3 Lesson 7

Introductory Activity: Read poem "Whose are these?"(emphasis on possessive 's').

Lesson Content: Place a group of classroom objects on desk. Select from objects and hand one to different children. Ask "Whose ruler is this?" Children answer in sentence form e.g. "It is Jack's ruler." Repeat for other objects e.g pencil, rubber. Write each child's reply on the blackboard. Read sentences together. Which word shows to whom the objects belong? (Isolate the possessive 's'. How would it sound if it didn't have the 's'? (Jack pencil etc). Give several examples so that children can hear the difference.

Conclusion: Bring out whiteboard chart in the shape of a dragon. Ask children to list things which belong to the dragon (e.g dragon's fire, dragon's tail etc). Write list on the dragon shape.

Lesson 8

Introductory Activity: Read through poem form previous lesson. Read through list on dragon chart. Isolate the part of each word which shows that it belongs to the dragon.

Lesson Content: Erase the possessive 's' from the sentences on the chart and ask children to read them through. Does it sound right? Why not? Ask individual children to write the 's' in the correct place on the whiteboard to make the sentence sound right.

Conclusion: Work with a partner and make a list of things which belong to each other (e.g. Jack's new football). Read your list to the whole group.

Lesson 9

Introductory Activity: Read through poem and dragon sentences. Revise the concept of the possessive 's'.

Lesson Content: Erase and replace the 's' to make sentences sound correct. Select individual children to erase and replace each time. Each sentence in both correct and incorrect form is read aloud each time so that children can hear the difference.

Conclusion: Complete activity worksheet and select the correct written form for each sentence.

WEEK 4 Lesson 10

Introductory Activity: Read Big Book "Poor Old Polly." Teacher reads first and children repeat.

Lesson Content: Discuss the way in which two ideas are presented in the story each time. "The pig was too bony; she swapped it for a pony." Show children how two ideas can be joined into one sentence by using a joining word. "The pig was too bony so she swapped it for a pony." Try the same sentence using other joining words such as but, then and. Do they make sense in the context?

Conclusion: Use a joining word to join the following sentences.
Mum bought a new dress. It didn't fit.

Lesson 11

Introductory Activity: Read through "Poor Old Polly" as per previous lesson. Revise cards with joining words.

Lesson Content: Choose individual children to select a joining word from the cards and use to combine with different pages from "Poor Old Polly." Read the new sentences together. Do all of the joining words make sense? Why not?
Show chart with sentence pairs. Choose children to put each pair of sentences together to form one sentence.

Conclusion: Each child selects one sentence pair and one joining word to re-write as one sentence.

Lesson 12

Introductory Activity: Read "Poor Old Polly" as in previous lessons.

Lesson Content: Revise sentence pairs from previous lesson. Children choose joining words to make each pair into one whole sentence. Read new sentences together.

Conclusion: Complete the worksheet by choosing an appropriate word to join each sentence pair.

WEEK 5 Lesson 13

Introductory Activity: Read together Big Book "Dan the Flying Man." Teacher reads, children listen. Repeat reading together.

Lesson Content: Select children to read each page individually. Ask children to nominate things about the text which they notice (characters, rhyme etc). Tell children that they are going to make a Big Book also but with different events, characters and rhymes. Ask children for ideas and list suggestions for characters and names for them.

Conclusion: Select characters from list and make a list of rhyming words for each character (cat, rat, hat etc).

Lesson 14

Introductory Activity: Read "Dan the Flying Man." Note the characters and the way the sentences rhyme.

Lesson Content: Review list of characters and rhyming words from previous lesson. Decide on story line for characters. Build up a list of verbs and adjectives to suit the story's characters e.g cat - hunting, creeping, stalking etc. Read through list words and begin to make the first draft of the story line.

"I am Matt, the hunting cat,
stalking, stalking to catch a rat.'

Conclusion: Use blank Big Book and pencil in page layout leaving space for text and illustrations.

Lesson 15

Introductory Activity: Read "Dan the Flying Man" as in previous sessions. Read draft sentences for class Big Book "Matt the Hunting Cat."

Lesson Content: Continue with story line from previous lesson. Add rhyming words to complete sentences. Review draft and make any necessary changes to layout.

Conclusion: Each child makes a large picture to illustrate one page of the completed book.

WEEK 6 Lesson 16

Introductory Activity: Read Big Book made in previous session - "Matt the Hunting Cat."

Lesson Content: Ask children to nominate words which describe cats e.g. furry, soft, playful, quiet etc. Make a list of the words on the "Describing" chart. Place "cats" card in the middle and read as phrases e.g furry cats, soft cats, etc. Now think of things which cats can do. Fill in the "Doing" chart. Read each group of words to make a sentence. "Furry cats jump." Emphasise the use of the capital letter to start the sentence.

Conclusion: Each child selects one combination of words to read aloud from the charts.

Lesson 17

Introductory Activity: Revise "Matt the Hunting Cat."

Lesson Content: Show charts from previous lesson. Read as simple sentences using words on charts. Select one or two children to read choices individually. Add new chart "Where." Children make lists of phrases e.g in the garden over the fence, etc. Combine all charts together and notice how original sentence has expanded e.g. "Furry cats jump over the fence." Change the order of the charts. Does this change the meaning of the sentence?

Conclusion: Write one expanded sentence in booklet.

Lesson 18

Introductory Activity: Revise "Matt the Hunting Cat."

Lesson Content: Revise phrase lists on charts. (Expand further if children are ready and add "When" and "How" charts. If not, leave at "Where"). Cut up all the sentence charts and ask children to mix and match to make new sentences.

Conclusion: Divide into groups and make as many different combinations of sentences as possible. Each group reads their combinations to the class.

WEEK 7 Lesson 19

Introductory Activity: Read together Big Book "Yes Ma'am."

Lesson Content: Ask children if they have noticed anything about the way in which the book is written. (The format is in questions and answers). How do we know which part asks the question? (Refer to the question mark as the punctuation marker). Read all the questions as they occur in the story. Divide class into two groups; one group reads the questions and the other group reads the answers.

Conclusion: Divide class into pairs. Think of a question to ask your partner and repeat with the other partner.

Lesson 20

Introductory Activity: Read together "Yes Ma'am" as whole group. Point out the question marks in each page.

Lesson Content: Choose individual children to read the questions as they occur in the story and the whole group to read the answers. Make a list of questions which you might ask a friend about what they had for breakfast this morning. Write each question on the whiteboard. Select children to ask the questions and others to reply.

Conclusion: Write a sentence of your own which asks a question.

Lesson 21

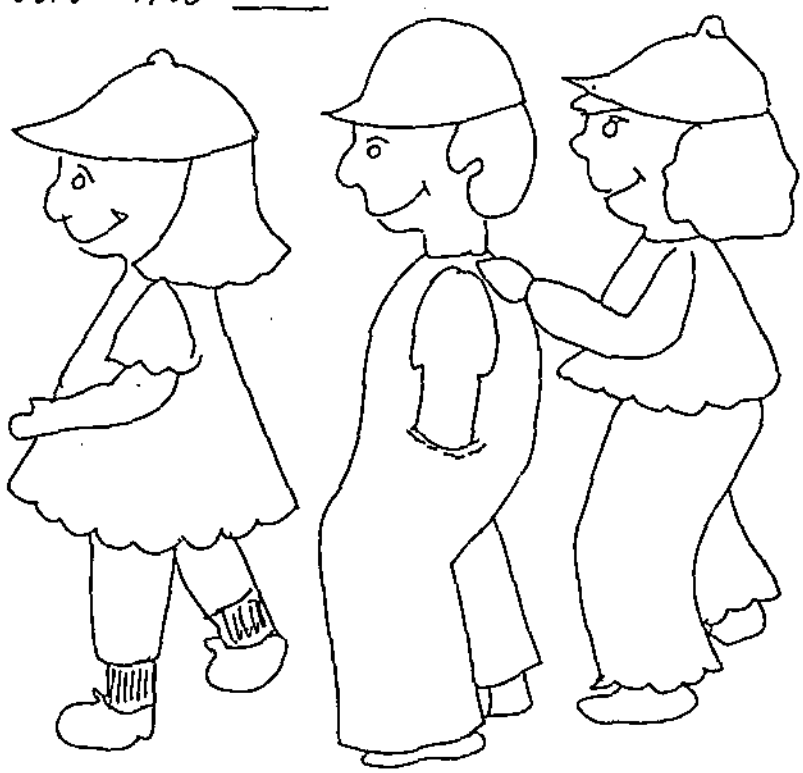
Introductory Activity: Read through "Yes Ma'am." Read the questions and answers in the story in groups.

Lesson Content: Revise use of question mark and its function within a sentence. Read list of "breakfast" questions from previous lesson. Choose children to provide answers to the questions.

Conclusion: Complete cloze worksheet. After each sentence put a question mark if it is asking a question and a full stop if it is not.

Name: Worksheet: Lesson 21

Janet and Sue were walking down the street together___ "What are you doing after school today___" asked Janet___ "Do you have swimming lessons ____" "No," replied Sue___ "It's too cold to swim today____ Would you like to come over to my house__" "That would be great," said Janet__ "Shall I bring my new colouring book with me ___"



WEEK 8	Lesson 22
Introductory Activity:	Read poem on chart "Henry Brown" to children.
Lesson Content:	Discuss the parts of the poem which are names of people, places and things. Tell children that the term "noun" means a naming word. Make a list of other nouns that you know. Sort the list into categories - people, animals, places etc.
Conclusion;	Choose one of the nouns from the list and write it in a sentence.

	Lesson 23
Introductory Activity:	Read poem "Henry Brown" together.
Lesson Content:	Select words from the poem which are describing words. Introduce proper term "adjective." Make a list of describing words that you know. Sort into categories (as for nouns).
Conclusion:	Choose one adjective and write it in a sentence.

Lesson 24

Introductory Activity: Read "Henry Brown" through together.

Lesson Content: Revise all the nouns and adjectives in the poem. Read the poem through again carefully emphasising the way the use of adjectives adds detail to each noun.

Conclusion: Draw Henry Brown exactly as he is described in the poem. Compare drawings to see if all details are correct.

WEEK 9 Lesson 25

Introductory Activity: Read poem "Henry Brown." Revise charts of nouns and adjectives from last week.

Lesson Content: In the poem "Henry Brown" highlight all the words which are nouns by using a coloured highlighter. Do the same for all the adjectives using a different colour. Make up a rule to remember the differences between them. "A noun is a naming word and an adjective is a describing word."

Conclusion: Give children a printed copy of poem "Henry Brown." Ask them to identify the adjectives in the poem without referring back to the original. Compare answers.

Lesson 26

Introductory Activity:	Read through noun and adjective charts from previous lessons.
Lesson Content:	Use adjectives from chart to make sentence strips e.g. "My mum has a new pink dress." Change the word order of the adjective and noun e.g. "My mum has a dress new pink." Note placement of adjective before the noun. Make up a rule about the placement of adjectives in a sentence.
Conclusion:	Write a one-sentence statement describing what you know about a noun or an adjective.

Lesson 27

Introductory Activity:	Read adjective and noun word lists.
Lesson Content:	Give out worksheet containing 10 adjectives compiled from lists of class suggestions and cloze passage. Cut out the adjectives and turn them over. Choose one word at a time and write them in order (1 - 10) in the spaces on the cloze sheet. Read different versions aloud. Do the adjectives fit the story? Why not? (Adjectives must fit the context of the story).
Conclusion:	Think of adjectives which would fit the context of the passage.

Name: Worksheet: Lesson 27

The _____(1.) boy was very _____(2.) as he walked along the _____(3.) footpath. He couldn't find the _____(4.) toy which his _____(5.) grandfather had given him. As he walked along, a _____(6.) dog came running towards him. The _____(7.) boy jumped off the _____(8.) footpath on to the _____(9.) road. Just then, a _____(10.) car came speeding by.

yellow	sad	cold	exciting
beautiful	tired	miserable	
wet	happy	boiling	

WEEK 10 Lesson 28

Introductory Activity: Read through Big Book "Superkids."

Lesson Content: Make chain writing sentences about the events portrayed in the book using "Superkids" as the subject each time e.g.

Describing	Subject	Doing	How or Where
clever	Superkids	fly	in the sky.

Make lists of words for each category except subject. Select a whole sentence and write on a sentence strip including the full stop. Cut the strip into words and give one word to a group of children. Re-arrange the children to change the word order of the sentence.

Conclusion: Repeat the procedure for other sentences.

Lesson 29

Introductory Activity: Read "Superkids" through together.

Lesson Content: Revise word lists and sentence strips from previous lesson. Make new sentence strips from any combinations not previously used. Cut into words and re-arrange to make new sentences. Keep one sentence strip un-cut.

Conclusion: Ask children to write the last sentence in a different way in their books.

Lesson 30

Written syntactic awareness test for all groups

APPENDIX D

LESSON CONTENT OF THE TWO CONTROL GROUPS

CONTROL GROUP LESSONS: YEAR 1

WEEK 1.

Introductory Activity: Big Book "In a Dark, Dark Wood" read by group at the beginning of each lesson.

Lesson Activities: Across three days the following activities were completed.

Read- a-long with tape

Choral and individual reading.

Change the ending for the story with one of your own.

Written cloze.

Rhyming words for those in the text. Text substitution.

WEEK 2.

Introductory Activity: Big Book "The Big Toe" read by group at the beginning of each lesson.

Lesson Activities: Across three days the following activities were completed.

Read- a long with tape.

Teacher modelled reading.

Group-by-group choral reading.

Predicting consequences from text.

Text improvisation - substituting alternative words.

Function of speech marks in print.

WEEK 3

Introductory Activity: Read "The Farm Concert" as a group at the beginning of each lesson.

Across three days the following activities were completed.

Lesson Activities: Read-a-long with tape.

Predict likely outcomes from text.

Make a story map.

Use of speech marks as guide to part-by-part reading.

Creative dance based on the content of "The Farm Concert."

Identify and list likely farm noises.

Make a class book called "Night Noises." Illustrate the book.

WEEK 4

Introductory Activity: Read the story of the "Gingerbread Man."

Lesson Activities: Across three days the following activities related to the story of the "Gingerbread Man" were completed.

Choral reading of the story.

Re-telling the story, orally, in correct sequence.

Making a pictorial gingerbread man and labelling the body parts.

Dramatising the story.

Written worksheet naming the characters and matching the names with appropriate pictures.

WEEK 5

Introductory Activity: Read "Obediah" as a group at the beginning of each lesson.

Lesson Activities: Across three days the following activities were completed.

Find the rhyming words in the story of "Obediah."

List the rhyming words and make own lists of words which rhyme.

Use the rhyming words to complete a given sentence.

Sound matching: use picture cues to find the missing sounds from a group of words (initial and final sounds).

WEEK 6

Introductory Activity: Read "Poor Old Polly" at the beginning of each lesson.

Lesson Activities: Across three days the following activities were completed.

Predicting and discussing likely outcomes in the story.

Identifying rhyming words in the story.

Tapping, clapping to identify each rhyming word as met in the text.

Choral reading; group-by-group reading.

Rhyming games.

Written activity: rhyming cloze.

WEEK 7

Introductory Activity: Read "Dan the Flying Man" at the beginning of each lesson.

Lesson Activities: Across three days the following activities were completed.

Predict likely vocabulary and story line.

Modelled reading.

Choral reading.

Read-a-long with tape.

Creative dance.

Suggest objects you could fly over and under. Complete written sentences with given framework.

WEEK 8

Introductory Activity: Read story book "Annie's Rainbow."

Lesson Activities: The following activities were completed across three days.

List the colours mentioned in the story.

Make a class list of favourite colours.

Choose a favourite colour and talk about it e.g. "My favourite colour is yellow because. . . . ."

Put ideas into a class book called "Colours." Illustrate each page in the book.

Read the written colour story. Complete a worksheet using colour names to complete each picture.

WEEK 9

Introductory Activity: Read book of "Dinosaur Facts."

Lesson Activities: The following activities were completed across three days.

Read dinosaur book together.

Make a list of real animals and fantasy animals (bunyip, dragon, monster).

Draw a fantasy creature.

Write a story about a favourite dinosaur.

Make a list of dinosaur words.

Written Activity: Tick the pictures which show real animals and cross the pictures which show fantasy animals.

WEEK 10

Introductory Activity: "Dinosaur Facts" continued across two days.

Read individual stories about different dinosaurs.

Describe the appearance and characteristics of different dinosaurs e.g stegosaurus, triceratops, brontosaurus etc.

Label the body parts of a brontosaurus.

Complete cloze sheet on each dinosaur.

Final day: Written syntactic awareness test.

YEAR 2 CONTROL GROUP PROGRAMME

WEEK 1

Introductory Activity: Read story "Dogger" aloud to children.

Lesson Activities: The following activities were completed across three days.

Discuss aspects of the story: feelings, characters etc.

Explore the feelings expressed in the story.

Answer in sentence form "How would you feel if . . . "

Re-tell story in small groups.

Sequenced story: one child gives a sentence about the sequence of events and the next child continues the story.

Complete written character rating scale.

WEEK 2

Introductory Activity: Read story "Where the Wild Things Are" to children.

Lesson Activities: Across three days the following activities were completed.

Discuss aspects of the story: feelings, characters etc.

Listening comprehension: what happened when. . .

Re-telling events in sequence.

Drama activities.

Draw and describe a "wild thing" of your own.

Written activity: match the description of each monster with the appropriate illustration.

WEEK 3

Introductory Activity: Read story "Alexander and the Terrible, Horrible, No Good Very Bad Day" aloud to children.

Lesson Activities: The following activities were completed across three days.

Discussion of the sequence of events in the story.

Complete a character rating scale on the character of Alexander.

Write about a "Terrible" day of your own. Read stories aloud to others in the group.

Make a description of Alexander- appearance, character etc.

Draw a picture to match the description.

WEEK 4

Introductory Activity: Read story of "Ant and Grasshopper" from basal reader.

Lesson Activities: The following activities were completed across three days.

Predict key words from the title.

Individual silent reading of the story.

Think of a question to ask someone else about the story.

Follow teacher-modelled reading.

Discuss moral of the story.

Re-tell story to a partner.

Read same story from a different basal reader.

Compare and contrast the two story versions.

Write an individual list of things the same and things different.

WEEK 5

Introductory Activity: Read story "Last Monday" from basal reader.

Lesson Activities: The following activities were completed across three days.

Teacher reads first two pages of the story.

Children write predictions of how the story will develop e.g.

Who are the characters? What are they doing?

What will happen next?

Teacher reads remainder of story.

Compare predictions with outcome of the story. Discuss.

Read whole story through silently on individual basis.

Write a list of all the things which the children saw.

Re-tell story to a partner.

Write a sentence of something that you did "last Monday."

WEEK 6

Introductory Activity: Read Big Book "The Farm Concert" at the beginning of each lesson.

Lesson Activities: The following activities were completed across three days.

From the Big Book activity identify the sound ow as in cow.

Make a class list of all the words you know containing this sound. Read through list together. Choose one word from the list and write a sentence containing the word.

Complete ow crossword and "What Am I?" puzzle.

Same sequence of activities for sound all as in ball.

WEEKS 7 & 8

Theme: Dinosaurs

Introductory Activity: Read parts of Big Book "Dinosaur Facts" at the beginning of each lesson.

Lesson Activities: The following activities were completed across six days. Make a list of facts for each of the following dinosaurs; Stegosaurus, Brontosaurus, Tyrannosaurus Rex. Complete the following activities for each dinosaur type. Vocabulary extension; cloze activity; jumbled words; action words; word sleuth. Write a brief description of each dinosaur type.

WEEKS 9 & 10

Theme: Farms

Introductory Activity: Read one of the following Big Books at the beginning of each lesson: "How Cows Make Milk," "Chickens Aren't the Only Ones," "The Greedy Goat."

The following activities were completed across five days.

Lesson Activities: The same format for Weeks 7 & 8 was repeated for Weeks 9 & 10 except that farm animals were studied. The same activities used for "Dinosaurs" were repeated for the animals cow, hen and goat. In addition, children made a food chain showing the journey from farm to supermarket for milk and eggs.

Final day: Test of written syntactic awareness.

APPENDIX E

CORRELATIONS BETWEEN THE VARIABLES FOR ALL GROUPS

Year 1 Experimental Group Correlations for All Tests

Variable	1	2	3	4	5
1.Oral Correction		.52*	.55*	.46	.57*
2.Written Syn Aw			.39	.46	.47*
3.Neale Accuracy				.92***	.95***
4.Neale Comp					.87***
5 RTRWT + St Lucia					

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

RTRWT = Ready-to-Read-Word-Test

Year 1 Control Group Correlations for All Tests

Variable	1	2	3	4	5
1.Oral Correction		.62**	.67**	.69**	.58*
2.Written Syn Aw			..62**	.62**	.65**
3.Neale Accuracy				.89***	.88***
4.Neale Comp					.84***
5 RTRWT + St Lucia					

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

RTRWT = Ready-to-Read-Word-Test

Year 2 Experimental Group Correlations for All Tests

Variable	1	2	3	4
1.Oral Correction		.58**	.53*	.51*
2.Written Syn Aw			.28	.34
3.Neale Accuracy				.90***
4.Neale Comp				

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

Year 2 Control Group Correlations for All Tests

Variable	1	2	3	4
1.Oral Correction		.36	.61**	.80***
2.Written Syn Aw			.74***	.68**
3.Neale Accuracy				.89***
4.Neale Comp				

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