

**GUIDELINES FOR THE IMPROVEMENT OF READING COMPREHENSION SKILLS
WITH REFERENCE TO THE LEARNING DISABLED SECONDARY SCHOOL PUPIL**

by

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submitted in fulfilment of the requirements for
the degree of

MASTER OF EDUCATION

in the subject

ORTHOPELAGOGICS

at the

UNIVERSITY OF SOUTH AFRICA

SUPERVISOR: DR A M BOOYSE

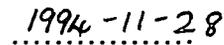
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SIGNATURE
(MRS I A S LATEGAN)



DATE

ACKNOWLEDGEMENTS

My sincere gratitude to the following people for all they have done:

Shireen

Jean, Ellen, Colleen and Tim

Penny, Anne and Margaret

My colleagues at St Christopher's and The School of Achievement

Estelle

My pupils at St Christopher's especially Std 5 1992, Std 6 1993 and Std 7 1994

My family

To UNISA for the studying opportunities over the past eleven years, the Department of Orthopedagogics, and the wonderful staff at the UNISA LIBRARY.

Special thanks to:

Peter, for his infinite patience, understanding and encouragement and *Dr Booyse*, for supervising this dissertation and for all her patience.

That I was *never* alone...

DEO GRATIAS

Title of Dissertation: **GUIDELINES FOR THE IMPROVEMENT OF
READING COMPREHENSION SKILLS WITH
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SECONDARY SCHOOL PUPILS**

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University: **UNIVERSITY OF SOUTH AFRICA**

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SUMMARY

In the secondary school situation, a pupil needs to read to learn, therefore it is imperative to comprehend what is read. Reading comprehension is one of the two functions of reading and it is dependent on the abilities of the reader, the reader's interpretation of the text and the context in which the text is read. In examining reader characteristics, it is evident that it is very difficult for learning disabled pupils with a reading comprehension deficit to comprehend successfully. Their unique problems can be exacerbated by such external factors as text components and the context in which the reading takes place. Reading comprehension has been instructed to learning disabled secondary school pupils using reading methods and strategies, to facilitate reading comprehension. From this practical experience and the literature studied, guidelines have been formulated for teachers to use to improve the reading comprehension skills of learning disabled secondary school pupils.

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PUPILS**

Key terms:

Guidelines; reading; reading comprehension; reading comprehension instruction; strategies; skills; learning disabilities; secondary school pupils; Specialised Education; cognitive functions; information processing; learned helplessness; metacognition; metacomprehension.

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CHAPTER 1

1.1 INTRODUCTION

In present times, the possession of a Matriculation Certificate determines career possibilities and could mean the difference between a productive contribution to society or becoming a burden.

It is a cause for great concern when the final National Senior Certificate examinations loom ahead and it becomes evident that some pupils have a level of reading which is far below standard and age expectations and that there is a large discrepancy between their ability to recognise words and comprehend meaning both in oral and silent reading. This inability has far reaching effects on all spheres of the pupil's life.

The demands on all pupils facing their final scholastic requirements are heavy, but for the learning disabled pupil with a reading comprehension deficit, they are exceptional. Learning content in its volume and complexity must be read, understood and learnt, despite their reading difficulties, attentional deficits, and lack of motivation which has been exacerbated by failure. Learning disabled pupils experience considerable difficulties in 'reading for meaning' and even more so in 'reading for learning'.

For learning disabled secondary school pupils at this stage of their academic career, especially considering they have had remedial

education for most of their schooling, should be capable of independent study, however, it would seem that this is not the case. These pupils are very reliant on their teachers to assist in the pursuit of knowledge and its meaning. Most teachers grossly underestimate the consequences and far reaching effects they have on a child's total development and later life. To illustrate this, Fred Epstein, the director of the division of paediatric neurosurgery at New York University Medical Centre recalls how in his tremendous struggle to read, write and do maths, one teacher's belief in him and his instruction in compensatory methods resulted in Epstein's (1994:39,40), coping more adequately and growing in confidence. This is but one single success story, there may be hundreds more who have never had these opportunities.

All teachers can make a dramatic difference to someone struggling especially if they are aware of the many constraints which thwart successful learning.

Reading problems are a worldwide phenomenon. According to the report of the Commission on Reading: "Becoming a Nation of Readers" (1985), as cited in "Progress of Education in the United States of America 1984 through 1989" (U.S. Department of Education:1990:57), many states in the USA began significant efforts to improve reading instruction.

The National Assessment of Educational Progress (NAEP) in the U.S. Department of Education (1990:57), reports that 17 year olds in school can carry out simple, discrete reading tasks, 86 percent can search for specific information, but only 42 percent can find, understand, summarise and explain relatively complicated information. Only five percent of the 17 year olds can synthesise and learn from specialised reading material. This includes mainstream pupils, if one

looks at learning disabled pupils only, the problem will be far more serious.

In South Africa the statistics can only be higher as a result of the lack of compulsory education for all population groups (Dednam 1992:112).

1.2 CLARIFICATION OF CONCEPTS

1.2.1 Introduction

In order to avoid misunderstanding and misrepresentation, the concepts pertaining to the learning disabled secondary school pupil with a reading comprehension deficit will be defined.

1.2.2 Learning disabilities

It is accepted that a great deal of controversy has surrounded definition formulation, however, the definition formulated by the National Joint Committee for Learning Disabilities (N.J.C.L.D.) in 1981 and revised in 1988, is the definition which has proved to be most acceptable because of its broad support by professional institutions. Among the reasons for this support are the recognition that learning disabilities extend beyond childhood, the presumption that learning disabilities result from complications in central nervous system processing and the clarification of the potential association between learning disabilities and other handicapping conditions (Reid 1988:31).

Therefore the 1988 definition in which adolescents and adults are also included, will be used in this dissertation.

"Learning Disabilities is a generic term that refers to a heterogeneous group of disorders manifested by significant difficulties in the acquisition and the use of listening, speaking, reading, writing, reasoning or mathematical disabilities. These disorders are intrinsic to the individual and presumed to be due to central nervous system dysfunction, and may occur across the life span. Problems in self-regulatory behaviours, social perception and social interaction may occur concomitantly with other disabilities but do not themselves constitute a learning disability. Although a learning disability may occur concomitantly with other handicapping conditions, for example sensory impairment, mental retardation, social and emotional disturbance or intrinsic influences such as cultural differences, insufficient or inappropriate instruction, they are not the result of those conditions or influences" (Hammill, Leigh, McNutt & Larsen 1987:109; Hammill 1990:77).

From the abovementioned definition, the following dimensions are noted:

- manifestations of learning disabilities can be diverse
- problems occur in the basic cognitive processes involved in listening, speaking, reading, writing, reasoning or mathematical calculations
- the learning disability is not primarily caused by sensory deficits, low intellect or environmental influences
- a learning disability has a neurological origin.

In this dissertation, the learning disability will be approached from an orthopedagogic perspective.

1.2.2.1 Categories of learning disabled pupils

The Manual for Educators in Schools for Neurally Handicapped Pupils (Department of National Education 1981: 15) use as their base, the classification of pupils into categories A, B and C as recommended

by the Committee of Inquiry into the Education of children with Minimal Brain Dysfunction (Murray 1969:26). The A and B category pupils will be among those in mainstream, however the category C pupil should be in Specialised Education but this is not always the case.

CATEGORY A

These pupils are slightly learning disabled. They remain in mainstream but require remediation for which they are taken out of class for periods or sessions.

CATEGORY B

These pupils are mildly learning disabled and require temporary-permanent remedial assistance (a term or longer), on a full-time basis.

Remedial classes or Aid classes are attached to certain mainstream schools or pupils can attend Remedial schools.

CATEGORY C

These pupils are severely learning disabled and are permanently assisted in schools for specialised education where specific educational programmes incorporate remedial, occupational and speech therapy (Van Wyk 1987:60). The Category C pupils will be mainly addressed in this dissertation.

1.2.2.2 Provisions for learning disabled category C pupils

The former Department of Education and Culture, Administration: House of Assembly offered Specialised Education for pupils with handicaps. Until the new policy is implemented, these provisions are still in use.

1.2.2.3 Criteria for enrolment to specialised education.

In order to qualify for enrolment at full-time Specialised Education schools the following criteria as specified in the Handbook of the

Department of Education and Culture (s.a:33) must be considered and applied:

The intellectual potential of the child must be average or above average. A cut-off point of a 90 Full Scale I.Q. has been implemented. The learning problem of these children must not be as a result of sensory deficit.

Any emotional problems must be secondary to the learning problem and not the primary cause.

A deficit in one or more of the following must be evident:

language, reading, writing, spelling and maths. The deficits must be ascribed to a serious learning disability, the origin of which is a psychoneurological dysfunction.

For schools without a secondary phase, pupils should preferably not be older than twelve years of age.

A final decision is dependent upon whether one or more or a combination of the following symptoms exists:

hard or soft neurological signs or electro encephalogram (E.E.G.) abnormalities. A neurological report specifying these and other relevant reports must accompany a referral.

Characteristic behavioural deviations, such as hyperactivity, attention deficit disorder, emotional lability and impulsivity, lying, theft, poor socialisation and adaptability, fear of new situations, poor perseverance, poor self-image, poor self-concept, lack of ability to plan and reason abstractly, memory disorders may also be present. There may also be problems of co-ordination, laterality and dominance as well as visual and perceptual shortcomings with resultant speech and language handicaps.

Category C pupils who fulfil the abovementioned criteria are still admitted to full-time Specialised Education schools after the necessary referral procedures have been followed and a vacancy occurs in the particular standard. Pupils are still taught according to

the previously Provincially prescribed syllabi in the Junior and Senior Primary departments, but in the Secondary School, syllabi prescribed by the former Department of Education and Culture, Administration: House of Assembly are followed until further notice. The culmination thereof is still the National Senior Certificate. However, many of the learning disabled secondary pupils, who were catered for in the primary school situation according to the provisions for the educational needs of learning disabled children, recommended by the Interdepartmental Advisory Committee regarding Handicapped Pupils (1980:17), have for various reasons been mainstreamed.

Whether the learning disabled pupils are in mainstream or specialised education, the fact remains that they have a learning disability which hampers them academically and has serious implications for their social development, their self concept, their affective life, as well as vocational implications.

1.2.3 Secondary school pupils

The secondary school embraces two phases, these being the Junior Secondary phase incorporating standards five, six and seven where pupils' chronological ages span thirteen to fifteen years. The Senior Secondary phase includes standards eight, nine and ten where the chronological ages are fifteen to eighteen years.

1.2.4 Specialised education

When pupils do not make sufficient progress in the mainstream educational situation, they may need additional specialised assistance from a paramedic staff, teachers, remedial teachers and psychologists to suit their needs. The multidisciplinary team at the schools offering specialised education to neurally handicapped pupils, consists of

therapists; speech, occupational, and physiotherapists. Pupils are referred to paediatricians, neurologists and ophthalmologists for their input to the multidisciplinary approach. Depending on the nature of the school, the orthopedist also forms part of the team. The multidisciplinary team assesses diagnostically and at the feedback, individualised education programmes are drawn up for the pupils according to their needs (Du Toit, 1991:60,61).

1.2.4.1 Specialised education secondary schools

In South African Specialised Education, the Secondary School is housed in the same building so that there is a continuation from the primary school. Some schools range from preprimary or Class i/Grade i/Sub A to matric. Others in turn have facilities to the end of the Junior Secondary Phase.

1.2.5 Reading comprehension

Reading comprehension is a continuous process in which the reader decodes information or messages and then encodes them into mental images that have meaning for one because one's experience with the symbols of the message is associated. Usually the printed message and the encoded message do not have a one to one relationship, therefore comprehension is a process of understanding and interpreting and pupils need direction, encouragement and specific teaching on how to apply thinking skills to reading (Transvaal Education Department (TED) s.a: 1,2).

It is always necessary to view the child as a totality, therefore the definition propounded by Maria (1990:14) will form the basis of this dissertation. For Maria, comprehension is regarded as:

"...the holistic process of constructing meaning from written text through the interaction of (1) the knowledge the reader brings to the text, i.e. word recognition ability, world knowledge, and knowledge of linguistic conventions; (2) the reader's interpretation of the language used in constructing the text; and (3) the situation in which the text is read".

1.2.6 Strategies and skills

Strategies are intentionally organised activities to facilitate learning.

It is this intentionality which differentiates a strategy from a skill.

A skill is a special ability used in a task, especially an ability acquired by training (Collins, 1983:1364). When strategies become internalised and therefore are automatically practically implemented, they are called skills (Garner 1987:50).

1.2.7 Guidelines

Guidelines are directing principles or standards for the direction or arrangement of a course of events (The Concise Oxford, 1964 s.v. 'guidelines'). Collins (1983 s.v. 'guidelines'), defines a guideline as a principle put forward to set standards or determine a course of action.

1.2.8 Remedial education

Remedial education is a form of orthodidactic support extended to pupils who have been identified as having learning problems (du Toit 1991:53). The Human Sciences Research Council (HSRC) report (1982:6), defines remedial education as:

"...specialised corrective assistance provided by education departments for pupils who are scholastically impaired and/or with specific handicaps."

1.3 BACKGROUND TO THE PROBLEM

Within the school learning population there are some pupils who have a discrepancy between their intellectual potential and actual academic achievement, or even a discrepancy between abilities. There is no evidence of mental retardation, a sensory handicap, serious emotional disturbance neither are these pupils environmentally deprived so they cannot be classified into the traditional categories of disabled children. The learning disabled form a heterogeneous group of children in that the combinations of their disabilities are unique to each individual but the inability to comprehend what they have read is emerging as one of the main problem areas.

The change from primary to secondary school is a major step for any pupil and it is by no means easy for learning disabled pupils. As the learning disabled child progresses in school, a reciprocal problem occurs in that the workload increases and becomes more dependent on reading comprehension. The inability to comprehend what is read becomes more prominent with far reaching effects because the emphasis is on learning the subject content in text books. Readers need to read for meaning in order to be able to learn from the subject content. Pupils are therefore required to read to learn, not learn to read and they are expected to come into the secondary situation with basic skills on which to build their new learning content. In many cases these basic skills are just not there, so the struggle to build the skills and incorporate new learning content simultaneously, continues. It is also very seldom that the readability level or the language used is on the level of the poor readers and the vocabulary is unfamiliar and/or difficult especially when new concepts are involved.

The demands on the secondary school pupil are also far greater as a certain degree of self reliance in the form of problem-solving and

study skill techniques, as well as memory strategies and the ability to plan and organise is expected in order to work independently. Teachers expect pupils to fill in on discussions which took place in class by completing assignments, doing their own research from books in the media centre, working independently and proficiently using textbooks, completing worksheets on their own. The capability of thoroughly preparing for examinations and tests is also expected. As a result of their problems, learning disabled pupils are unable to read with understanding and so they need more assistance.

However, teachers in general are pressured by lengthy syllabi, limited time and an increase in academic standards resulting from the pursuit of educational excellence. Reading is receiving less and less instructional emphasis as pupils progress in the secondary school. Very few secondary school teachers have the knowledge or the extra training in remedial teaching, therefore they are limited in understanding the difficulties experienced by learning disabled pupils. They are also unaware of the necessary resources to assist learning disabled pupils in their needs.

There are pupils that experience great difficulty with reading comprehension and working independently and are therefore unable to read to learn from text books. In the secondary school situation it would seem that there is a heavy reliance on text book learning with the teacher acting as an interpreter of the subject content. In spite of the difficulties these pupils experience, they are expected to face the same secondary school demands to obtain the National Senior Certificate.

While assessing the reading of learning disabled standard nine pupils attending a full-time Specialised Education School, the researcher found a significant discrepancy between word recognition and

comprehension skills, whether pupils read orally or silently. If one considers the volume of learning content that has to be learnt for test and examination purposes, proficient reading for meaning is imperative.

Diagnostic analyses of the test results done by the researcher, revealed difficulties with the understanding of main ideas, vocabulary, inferences, facts and little attention being paid to punctuation. Not being able to select main ideas can result in pupils having to deal with too much information as the relevant and irrelevant cannot be separated. A lack of vocabulary is frustrating to the flow of reading as pupils need to continuously refer to the dictionary. Prior knowledge needed for the application of inferences and predictions is often lacking. In the abovementioned diagnostic analyses it was also revealed that some pupils are functioning on a literal level of comprehension which merely requires the basic facts in answer to questions such as who?, when?, where?, why? etc. The learning disabled show very little, if any evidence of interpretive, critical or creative levels of comprehension. According to Lerner (1981:312), it has been implied that each level of comprehension requires a greater degree of cognitive functioning. As reading is such an integral part of learning in the secondary school situation, pupils with reading disabilities will struggle and may fall behind very rapidly in nearly all school subjects because each subject requires a great deal of reading. This may result in other secondary problems such as a negative self concept, a lack of motivation to succeed, dislike of school, truancy or becoming dropouts, to mention a few. A deficit in reading comprehension therefore has far reaching effects on the child's total life and also his adult life. It is not only the child's schoolwork which is affected but the ripples flow into the social skills of learning disabled pupils where passive communication and learning styles are evident. It is very difficult to hold a conversation with someone who

has a limited knowledge basis or poor expressive language. Glaser (1985:27) feels that critical thinking is vital in order to be able to contribute democratically to solutions of social and community issues.

The technological environment is undergoing many changes at a fast pace and Chipman and Segal (1985:1) wonder what the future knowledge requirements of pupils will be. What they feel is really necessary, is that the pupils know how to learn the new information and skills which can then serve as life skills. Reading is still essential for any vocation and is almost a necessity for obtaining so-called adult 'privileges'. One needs to be able to read to obtain a driver's licence and be able to complete application forms for work or to open accounts etc. The consequences of an inability to read traffic signs and directions and instructions on medicines, are frightening. Even a visit to a restaurant can be traumatic and embarrassing to a learning disabled person as the menu needs to be read.

The importance of reading comprehension along with the difficulties learning disabled pupils experience with this, suggests a dire need for an increased emphasis upon the development and maintenance of effective reading comprehension instruction in the secondary school.

1.4 FORMULATION OF THE PROBLEM

In the light of the above then, the following question needs to be asked: What can be done to remediate the lack of reading comprehension in learning disabled secondary school pupils? In order to find the answers, the following concepts will need to be explored:

- what is reading comprehension?

- who is the learning disabled secondary school child with a reading comprehension deficit?
- what to do when basic skills are lacking in reading comprehension deficits and what self monitoring skills could encourage pupils to take responsibility for their own learning and become active learners who can function autonomously.

The challenges confronting the learning disabled secondary school pupil with a reading comprehension problem clearly point to the necessity for interventions that are responsive to the unique characteristics of the individual while being appropriate for the settings with which learning and adjustment occur.

From the exposition of the problem as well as from the literature study, it is evident that reading comprehension should be taught to learning disabled pupils. Thus the problem which the study addresses concerns the following:

- are pupils specifically taught how to comprehend what they are reading?
- what are the problems preventing learning disabled pupils comprehending what they read?
- are there existing guidelines for teaching reading comprehension?

1.5 THE AIM OF THIS STUDY

1.5.1 Aim

The aim of this study is, having made an indepth study of reading comprehension and secondary school learning disabled pupils with reading comprehension deficits, to construct pedagogically accountable guidelines which could enhance the reading

comprehension of the learning disabled secondary school pupils.

1.5.2 Objectives

In order to achieve this aim, the following objectives apply:

- an intense study of reading comprehension will be necessary to determine which abilities are needed for and which strategies facilitate successful reading comprehension. From this, criteria for teaching reading comprehension can be formulated. ✓
- to determine the reason(s) for the learning disabled pupil's inability to comprehend what they are reading, effectively and to make an analysis of the impact of the reading comprehension deficits on the learning disabled's total development.
- reading methods and strategies will be studied and practically implemented ✓
- to design from the practical experience, pedagogically accountable guidelines which could be used by teachers to improve the reading comprehension of learning disabled pupils. ✓

The problem which is researched in this dissertation is executed from an orthopedagogical perspective, according to which, guidelines will be set to teach learning disabled secondary school pupils how to improve their reading comprehension process.

1.6 RESEARCH METHODOLOGY

1.6.1 Literature study

To accomplish the effective realisation of the set aim, an intensive literature study will be done. Thus documents will be studied in order to intensively cover the field of reading comprehension and the learning disabled secondary school pupil. These documents referred to would include the latest research findings, interpretations of other researchers and all available authoritative sources to enable the researcher to obtain the relevant information.

The following will be researched in the literature:

- what is reading and reading comprehension?
what are the important aspects of reading comprehension?
how does a child learn to read with comprehension?
- who is the learning disabled with a reading comprehension problem?
what factors prevent the child from reading with comprehension?
- which reading methods and strategies can be used to teach learning disabled pupils with reading comprehension deficits?

As the researcher is a teacher of learning disabled pupils, the opportunity arises to investigate the possibilities and limitations relating to the stated problem. In this regard, van Deventer (1983:16), maintains that as subjective experience offers an original, analytical connection, it can consequently be accepted as a method. Van Dalen (in van Deventer 1983:16) is also of the opinion that

"...appealing to personal experience is a useful and common method of seeking knowledge".

This research is therefore primarily a literature study.

1.7 DELIMINATION OF THE RESEARCH FIELD

This research is done from an orthopedagogic perspective.

1.7.1 Orthopedagogics

Orthopedagogics is practising the science of correcting deficit manifestations in the child's education, be it within the child, the actual guidance activity or the educational situation (du Toit 1991:3,4.)

The Greek words pais(child) and agogein(lead/guide), form the roots of the word pedagogics which means the guidance/accompaniment of a child by an adult, thus education. Orthos is also of Greek origin meaning, straight. When used as a prefix to other words, the implication is that of straightening or correcting something which deviates from the norm (du Toit 1991:3,4). Pedagogics is the science of education. It is an autonomous science with its own field of study, terminology and research methods. It is made up of several part perspectives/disciplines, each of which use the phenomenon of education as their point of departure (van den Aardweg and van den Aardweg 1988:162). Orthopedagogics is one of these part perspectives of pedagogics and it accentuates the corrective component (ortho) as opposed to the deficit thus allowing problems to be turned into opportunities and creating a positive atmosphere (du Toit 1991:4,14). The situation is a learning one in the school where the teachers are guiding the pupils to fulfil their academic requirements.

Orthodidactics is the study of corrective teaching. Orthodidactics and orthopedagogics are linked together and contained in each other, therefore neither can be isolated from the other (Du Toit 1991:15,16).

The debilitating influence of a reading comprehension deficit on the academic performance of learning disabled secondary school pupils is the problem under investigation.

1.7.2 Demarcation of the population

This research will be directed at category C pupils in Specialised Education in the Junior Secondary Phase (Standards 5,6,7). The emphasis will be on their reading comprehension performance. Reading comprehension will be investigated as well as ways in which the performance of learning disabled pupils can be improved.

1.8 ORGANISATION OF STUDY

Chapter two reviews relevant literature pertaining to reading and reading comprehension to determine what occurs when a reader comprehends. The reading comprehension process will be illustrated to determine criteria for teaching reading comprehension.

Chapter three involves the descriptions of the characteristics of the learning disabled secondary school child with a reading comprehension problem. The factors causing the child's inability to understand the written word will be identified.

A program of reading comprehension instruction including reading methods and strategies has been implemented by the researcher over a period of two and a half years. Chapter four contains these reading

methods and strategies as a didactic base for the guidelines which have been devised for the use of teachers of secondary school learning disabled pupils to improve reading comprehension.

In **chapter five**, an attempt will be made to provide guidelines for the teaching of reading comprehension. From the literature on reading comprehension and the study of the learning disabled child's specific problems in reading comprehension, it is evident that certain criteria are necessary to successfully comprehend what is read. What is also evident is that the learning disabled child may be unable to meet these criteria.

The final chapter, (**chapter six**), will contain the deductions, findings and recommendations evolving from this study.

CHAPTER TWO

READING COMPREHENSION

2.1 INTRODUCTION

Society's sentiment that the ability to read and comprehend is indicative of one's intellectual capacity is not a new one. However, what has been given more prominence of late is the practical aspect of reading. Reading with meaning provides one with opportunities to promote and provide employment skills as well as participation in the social and recreational activities of daily life. Simon (1993:29), supports the view that reading is a practical means for the development and maintenance of occupational and vocational skills and for participation in the social and recreational demands of life, by claiming that "millions of South Africans live frustrated difficult lives because they can't read". This author indicates that five million South African adults have not been to school and being illiterate inhibits their total functioning in society. Furthermore, according to Simon (1993:30), another ten million are functionally illiterate. These people are obviously or totally precluded or severely disadvantaged in using reading or writing skills required to comprehend and utilise printed matter used in workplaces or necessary for ordinary daily living, for example, completing application forms and/or following

directions on medicine bottles and in car and appliance manuals, just to mention a few.

In her article on the importance of being able to read, Simon (1993:30-33) mentions examples of where illiteracy was overcome and the ability to read thus resulted in a significant difference in their individual lives.

In America it would seem that aliteracy, where one is able to read but lacks the inclination to do so, is a problem on the increase among young people (Turner 1992:50). Turner continues by claiming that the cardinal aims in teaching reading are for pleasure and to acquire information, but very few people commit themselves to pleasure reading or make reading a lifelong activity, hence the aliteracy.

The literature contains many divergent definitions of reading and reading comprehension each with their own particular emphasis. However, underlying all these hypotheses there can be little doubt that the purpose of reading is to gain meaningful information from written symbols.

According to Sutaria (1985:226), word recognition and reading comprehension are the two functions necessary to break the written code to gain information and thus attain meaning from visual information. As such, reading comprehension is an integral facet of reading which cannot in principle be separated. For the purpose of this dissertation, reading comprehension is set apart in order to simplify the explanation of the different facets involved therein.

The school is where reading is formally taught. Within this

environment the teacher's belief about reading will influence the hows and whys of his/her teaching. Before initiating an indepth study of reading comprehension, reading will be defined.

2.2 READING

2.2.1 What is reading?

The twenty years of research findings by Anderson, Hiebert, Scott and Wilkinson (1985:17,18), will form the base of the description on the nature of reading.

Firstly, reading is a *constructive process* where meaning from a printed text is dependent on the readers' prior knowledge. This is used to supplement the information which has been read thus allowing the reader to construct meaning. Reading is also an *interactive process* with involved active interaction evident between the reader and the text. That reading is a *language process* is evident in that as one reads, there is an integration of information emanating simultaneously from several sources (for example; visual, auditory) simultaneously with graphophemic, morphemic, semantic, syntactic, pragmatic, schematic and interpretive information (Hall, White and Guthrie 1986:90). Reading must be *fluent*. As reading is highly dependent on the ability to break the spelling-to-sound code, decoding or word recognition should be so automatised to facilitate comprehension. The researchers (Anderson et al. 1985:17,18) also state that reading must be *strategic*. Cognitive strategies are described by Deshler, Alley, Warner and Schumaker (1981:421), as techniques, principles or rules which will promote the attainment, operation, assimilation, storage and recall of information according to circumstances and conditions. Good readers were found to

engage in a variety of cognitive strategies to assist learning and retention. The advantages of using different strategies are that they enable readers to alter their reading styles to match the purpose of their reading and also to adapt it to the content of the reading material. Strategies can also enable readers to monitor their reading comprehension by acknowledging when they are not comprehending. If this happens the reader can then utilise debugging or fix-up strategies such as, rereading, reading on, or consulting external sources (dictionary). Learning to read is a *long-term process* requiring sustained attention and if progress is the desired result, practice is imperative (Anderson et al 1985:17,18).

Over the years numerous definitions of reading have been propounded with the influence of the particular theory of reading in vogue being evident.

2.2.1.1 *Definitions of Reading*

Flexibility should exist in definitions of reading to indicate the growth which should result from studying about reading, language, cognition and children. The definition of reading which one chooses to use must also be relevant to one's needs. Several examples of reading definitions are postulated as well as their shortcomings in being selected for this dissertation. Ekwall and Shanker (1988:73) proposed that:

"...reading is the act of interpreting, by the reader, what was written by the author".

However, for teachers of pupils requiring remedial reading where diagnosis and remediation are significant, it is not explicit enough.

It would therefore need such concepts as the recognition and analysis of words as well as the understanding of words and ideas included.

In one of her informal studies, Maria (1990:9) required a fifth grade boy to explain how he had comprehended the difficult text he had to read. He replied:

"It wasn't any one thing. It was everything put together."

She was sufficiently impressed to appropriate it as her own definition of reading. This definition embodies the interactive and holistic nature of reading but a need still exists for a detailed description of what reading entails because reading is more than just the recognition of words. To explain this Bond, Tinker, Wasson and Wasson (1984:2,3) define reading as:

"... the recognition of printed or written symbols which serve as stimuli to the recall of meanings built up through the reader's past experience. New meanings are derived through manipulation of concepts already in his possession".

Due to the comprehensiveness, the emphasis which is put on meaningful response as well as the inclusion of all the different factors which can affect comprehension, the definition provided by Harris and Sipay (1985:444), will be used in this dissertation:

"Reading is comprehending; it is the meaningful interpretation of the written form of language. Reading comprehension is the result of the interaction among the reader's perception of the graphic symbols that represent language, linguistic skills, cognitive skills and knowledge of

the world. A wide range of factors can influence children's reading comprehension ability and their interpretations of what they read."

This definition also captures the essences described in the nature of reading (cf. 2.2.1), in that reading is constructive, interactive, a language process and dependent on cognitive skills. This definition is a culmination of various points of view from the past. It is thus important to mention a few of these views on reading.

2.2.1.2 *Views on reading*

(a) *The perceptual/cognitive view*

In the late nineteenth and early twentieth centuries word recognition was emphasised. However, according to Dechant (1991:14), researchers such as Huey (1908) and Thorndike (1917), were aware that there was more to reading than mere word recognition. Specific reference is made to Huey's (1908) postulation that reading "involves the most intricate workings of the human mind" and as such made the investigation thereof arduous. Wittrock (1981:232), notes that Huey (1908) showed special concern for the role of perception, inner speech and nature of meaning in reading. This was interpreted by Wittrock (1981:232), as the earliest move in this century to cognitive and neuropsychological processing in reading. Dechant (1991:15) mentions that for Thorndike (1917), reading and thinking were synonymous and included learning, reflection, judgement, analysis, synthesis, problem solving, selection, organisation, data comparison, relationship determination and critical evaluation of the reading material. This was then followed by the Behaviouristic view which began to gain in popularity.

(b) *The behaviouristic view*

Between 1910 and 1955, according to Wittrock (1981:233), Behaviourism became the focus of attention for psychologists. Educators persisted with the age-old contention regarding initial reading and the credibility of the "phonics" and "look and say" methods. Behaviouristic theories, according to Wittrock (1981:233), emphasise the connection between stimulus and response. As the learner repeats responses, predictable, controllable habits are formed which are reinforced for maintenance. When recognition is automatic, it is presumed to have been learnt and as such it will always be recognised. Shaping and chaining are used after the initial focus on the letters, sounds, words, phrases and sentences, to reach the final purpose of reading as indicated by Gearheart and Gearheart (1989:289). The prominence of word recognition continued with the linguists.

(c) *The linguistic view*

In the early linguistic models there was also an emphasis on word recognition. Reading was clearly viewed as the decoding of graphic symbols into phonemes. The linguists assumed that the successful decoding of the graphic symbols into phonemes would automatically result in the extraction of meaning (Lerner 1988:359).

In approximately 1955, cognitive psychology took precedence resulting in reading being viewed once again as a cognitive process (Sutaria, 1985:226).

(d) *The cognitive psychological view*

According to the cognitive theorists, learners are actively involved in eliciting meaning. Visual information (graphic symbols) is integrated in the brain with one's prior knowledge and experience. The reader's prior knowledge and experience is of the utmost importance in the active construction of meaning. The decoding of the visual information is not the focus of attention but is rather regarded as a medium to facilitate the reading process. The emphasis is thus on the cognitive processing, purposeful behaviour and the learners' organisational structure of the text (Gearheart and Gearheart, 1989:289,290).

In order to comprehend, according to Lerner (1988:359,360), there must be a link between the graphic information and the reader's existing knowledge. This hypothesis became prominent in the psycholinguistic theorists' views.

(e) *The psycholinguistic view*

Reading is a language process (cf. 2.2). The psycholinguistic view of Perfetti (1985) as cited by Dechant (1991:15), is that the understanding of reading is facilitated by linguistic processes and that language processing is significant in the processing of graphic information. On the basis of this, Goodman (1973:22,23), defined reading as

"...a psycholinguistic process by which a reader reconstructsa message which has been encoded by a writer as a graphic display".

This graphic display is the input but it does not as such comprise

meaning. Thus in order for the output to be meaningful, language must be used to interact with the graphic information. As such an understanding of how reading functions is dependent upon an understanding of how language functions.

It has been postulated by Goodman (1972:147), that two structures exist and relate in a complex manner via rules of grammar. They form the link between sound and meaning. The two structures are surface and deep. The surface structure includes sounds and the written representation of information which accesses the brain via the senses. The deep structure is that which gives meaning and is in the mind of the author and the reader. The psycholinguistics contributed positively to the existing views on reading. The importance of the context emerged as did the language base of reading. Successful reading was now seen as dependent on readers making predictions which must be confirmed or disconfirmed. Smith (1982:68), maintains that prediction is the basis of comprehension and defines it as the "prior elimination of unlikely alternatives". Predictions which were disconfirmed required corrective measures. Dechant (1991:18,19) alludes to reading also being seen as a "meaning-centred" process.

The decade, 1970-1980, according to Reid (1988:11) saw the emergence of a new approach to learning. Lynch and Lewis (1988:371) also noted a change in emphasis in current research. *How* learning takes place was being investigated. The change of emphasis referred to is for Reid (1988:11,12), a result of a move from the Behaviourist perspective where the emphasis was on what is to be learned, to where children are seen as *active* learners who through their own activities *interpret* the environment. Another factor believed to have had an effect on learning and the change of emphasis, is the recognition of one's frame of reference

and whether it is accessible and practically implemented.

How one learns, assimilates, accommodates, transfers and generalises what is learnt is important and thus forms the basis for the newer cognitive view of reading.

(f) *The cognitive view*

The cognitive approach according to Hresko and Parmar (1991:21,22) concentrates on the attainment of knowledge. The learner is seen as the focal point with the interaction between the learner and the learning situation being considered. It also emphasises the learner's active involvement in learning, and explains how children learn by using their information processing abilities and additional cognitive activities. The cognitive approach, in recognising the significance of the learner, is thus child-centred. It accentuates the child's entry into the learning situation with their own frame of reference formed by experience and meaning that results from these experiences. This prior knowledge serves as a base for environmental interaction where information is actively sought and transformed into their own reality through their own thoughts. Learners must realise that they must be active in the learning process as learning involves the construction and control of information. The attribution of meaning results from experience and the interaction with the environment.

The cognitive approach recognises the function of executive processes in learning as well as the acquisition of knowledge. Perceiving, classifying, problem-solving, reasoning, making judgements, decision-making, thinking critically, evaluating and remembering are a few examples of the processes involved

(Reid 1988:39-43; Kirk and Gallagher 1989:190).

The aim of learning is to retain that which has been learnt, hence the significance of long-term retention. Furthermore as the mind operates systematically and changes in one area will influence other areas, an holistic perspective is evident. Learning is a cumulative process, where incoming new information is added to prior knowledge resulting in transformation and elaboration of that which is known.

The cognitive approach recognises the significance of the learner in the learning situation and his/her interaction with the environment. In so far as reading goes, it contributed to the shift in emphasis from the previous passive view where it was believed that meaning was inherent in the text to the current view that readers utilise their prior knowledge and cognitive strategies in order to actively construct meaning. For these reasons the cognitive approach will form the point of departure for this dissertation.

Reading is a learned process and therefore to understand reading and reading comprehension, the concept of learning with specific emphasis on reading and reading comprehension will be addressed.

2.2.2 The learning processes involved in reading and reading comprehension

For learning to take place, *learners* must be *active* as knowledge acquisition is neither a supplementary procedure nor merely a stimulus response. Carpenter and Just (1986:16) mention the marked advances made in the last decade towards outlining the

cognitive processes in reading responsible for combining information after the perceptual processing has taken place so that the text can be comprehended.

2.2.2.1 *The cognitive processes*

In his reference to reading as "a mental process, a dynamic action-filled way of responding to printed symbols," Stauffer (1975:4), emphasises cognitive functioning. Reid (1988:17), confirms this in her statement that learning to read requires more than accuracy in word identification. In fact, she postulates that reading requires the ability to monitor comprehension, detect errors, ascertain main ideas of each paragraph and connect information for the understanding of cardinal concepts. These cognitive functions are also in line with Stauffer's (1975:24) belief that self-regulation is intrinsic to reading-thinking. Additional cognitive functions that facilitate reading are the ability to affirm purposes, reason, judge and refine and extend ideas (Stauffer 1975:24).

Cognition is a complex concept composed of different components which are highly complicated and interrelated. However, for the purposes of this study, individual components are discussed separately but not in any order of importance.

(a) *Intellect*

One's intellect cannot be measured but it refers to the totality of one's *cognitive* abilities such as perception, insight, memory, knowledge, experience and imagination. All these play a crucial role in reading. Intelligence is the practical implementation of the intellect. It influences the facility and speed of learning, logical

reasoning, problem-solving and how one contends with unfamiliar situations (Van Den Aardweg and Van Den Aardweg 1988:117).

According to Dechant (1991:112), "meanings are the essence of cognition". If one considers that reading comprehension involves the constructing of meaning (cf. 2.3.2), then cognition plays a vital role in reading comprehension.

(b) *The role of cognition*

Cognition refers to the processes or faculties by which knowledge is acquired and manipulated (Bjorklund 1989:3). These processes include the recognition, identification and association of meaning as well as the inference of new meaning beyond the figural information evident in the environment (De Ruiter and Wansart 1982:47). When reading to comprehend, the reader must recognise, identify and associate meaning and infer new meaning beyond the information in print. In order to do this, the reader must draw on his *prior knowledge* (cf. 2.3.3.1 (b)). This includes the actual knowledge, goals, experiences and strategies that are used by the individual to further the acquisition of knowledge (Fry and Lupart 1987:176).

components
involved
in
cognition

During the secondary school phase, as a result of the addition of an abstract dimension to the adolescent's cognition, there is a transition from concrete to formal thoughts. Pupils begin in an increasing way to develop the capacity to perform logical ideas and thoughts. Formal thought encourages problem-solving through such techniques as hypothesis testing and abstract reasoning. Formal thought improves the information processing abilities as adolescents become aware of the contribution made by

attention, memory, knowledge, communication and language skills (Van Den Aardweg and Van Den Aardweg 1988:43; Sileo 1989:228; Reid 1988:14).

Attention as a cognitive process is mandatory for learning and therefore for reading.

(i) *Attention*

In order to attend to a task, one must be able to discriminate between that which is of importance and necessary for the task (relevant) in contrast to that which is unnecessary (irrelevant) (Kirk and Gallagher 1989:188).

Two types of attention, selective attention and sustained attention, have been identified. Selective attention requires that environmental stimuli are experienced through one's sensory input channels via an orienting reaction activating the relevant area in the brain to the source of the stimuli (Gearheart and Gearheart 1989:124). Selective attention is classified as cognitive as the individual is involved in making a choice as to whether attention will be paid to relevant or irrelevant stimuli. A further decision is necessary regarding which strategies will be used to sustain attention (Kauffman and Hallahan 1981:144,145). Scanning the available stimuli and focussing on relevant stimuli are strategies necessary for selective attention (De Ruiter and Wansart 1982:29).

Sustained attention necessitates focussing cognitive operations on particular tasks, thus staying with a task over a period of time. It comprises attention span which is affected by task complexity and the intensity of the cognitive processes involved in the task

(Gearheart and Gearheart 1989:124). The strategies necessary for sustained attention are, sustaining focus on stimuli while they are relevant and the ability to shift the focus to new relevant stimuli as and when required (De Ruiter and Wansart 1982:31). Attention, specifically sustained attention, is of critical importance and an essential component in comprehension monitoring. When it is perceived that the reading matter is not being comprehended, the first question that must be asked is, was I reading attentively? If the answer is no, then rereading will have to take place.

In order to pay attention and to know what is relevant or irrelevant means that one should be able to perceive correctly. Information to which attention is paid must be further processed by perception.

(ii) *Perception*

Perception is a cognitive process involving the ability to derive meaning from information received by all the senses (visual, auditory, olfactory, tactile and kinesthetic). Perception is an act of categorisation according to which stimuli are taken in, identified, sorted and given individual meaning (Gearheart and Gearheart 1989:125). Perceptual processes comprise discrimination, through which one can note distinctive features within a specific sensory system; coordination which is an internal process in which stimuli from more than one sensory channel are meaningfully combined and sequencing which involves the recognition of sequence in temporal and spatial stimuli (De Ruiter and Wansart 1982:40).

Motivation to undertake cognitive operations and the executive function of classifying the necessary strategies for the practical

implementation thereof, are additional variables influencing the reception and processing of information (Gearheart and Gearheart 1989:124).

Visual and auditory perception are two significant perceptual processes required for reading. Through visual perceptual processes, visual sensory stimuli are interpreted and organised for meaning to result. There are five major components of visual perception: visual discrimination (the ability to discriminate between visual stimuli, b/d pin/pan), memory (the ability to remember visual information) and sequential memory (the ability to recall visual information in a sequence), closure (the ability to see the whole even though details have been omitted el-ph---/elephant), figure-ground discrimination (the ability to pay attention to the relevant material and ignore the irrelevant) and spatial relations (the ability to perceive the position of objects in space in relation to oneself and other objects), (Mercer 1987:230).

Through auditory perceptual processes, auditory sensory stimuli are recognised and interpreted for meaning to result. The major components are: auditory discrimination (the ability to discriminate sounds and words), association (the relation of ideas heard), memory (the ability to remember what has been heard), and sequential memory (the ability to recall what has been heard in sequence), analysis (the ability to break words into phonic elements) and synthesis (the ability to blend words from phonic elements (Mercer 1987:231).

Reading is also described by Dechant (1991:14), as a high-level thinking process as what is read must be interpreted in the light of one's prior knowledge in order to form ideas, relationships and classifications. This requires higher order thinking.

(iii) *Thinking*

Thorndike (1917) recommended (Dechant 1991:15), that reading a paragraph requires the same cognitive tasks as thinking, such as learning, reflecting, making judgments, analysing, synthesising, solving problems, making selections, organising, comparing data, determining relationships and critically evaluating the reading material.

That 'reading is thinking' is avidly advocated by Stauffer (1975:3,4) who also says that reading should be taught as a thinking activity with the purpose of teaching readers to examine, find proof, suspend judgement, test hypotheses and make decisions.

Information which the individual needs to keep must be stored in memory. Memory is decisive to the learning process. For it to function appropriately it requires the reader to pay attention to the stimulus, perceive the received stimulus and store the information for retrieval for future use.

(iv) *Memory*

Memory can be defined as the ability to store and retrieve information at discretion in the absence of the original stimulus (Sutaria 1985:135). There are three stages of memory according to Howe (1970:35), reception, storage and retrieval.

Memory is not a global phenomena, but implies different facets. Receptive memory is the ability to observe the physical features of a given stimulus for recognition in time. Visual memory is the ability to store and retrieve stimuli which have been seen whereas

auditory memory is the ability to store and retrieve information that has been heard. The ability to recall stimuli in the sequence of observation and presentation is sequential memory with recall memory being the ability to reproduce a formerly experienced stimulus in its absence. Rote memory is the ability to learn certain information as a habit pattern. It is used particularly when information is not understood and thus not internalised. Recognition memory is the ability to identify a previously learnt stimulus. Semantic memory in so far as reading is concerned, contains orthographic and lexical knowledge as well as one's general knowledge of the world. Crucial to reading is long-term and short-term memory. Short-term memory's capacity is limited, persistence is very brief with immediate retrieval and very fast input. On the other hand with long-term memory, the persistence and capacity is practically unlimited and input is very slow. Retrieval depends on organisation (Lerner 1988:286; Mercer 1987:224; Reid 1988:10; Samuels and Kamil 1984:205; Sutaria 1985:136; Worden 1983:134).

Metamemory is associated to the basic memory processes of recall, recognition, knowledge and cognitive strategies. Metamemory is the ability to put into words one's knowledge as well as take cognisance of one's competence in the storage and retrieval of information. It also takes cognisance of the fact that variables such as level of difficulty, meaningfulness and forgetfulness play a role in remembering things (Gearheart and Gearheart 1989:130).

For Dechant (1991:90), "Reading is also a linguistic process; it is a language art." The reader's knowledge of language thus plays a vital role in reading.

(v) *Language*

Language is described by Swift (1988:320), as a summary symbolic system used to communicate. In order to learn, understand and remember written language, that is, to comprehend, information processing is dependent on knowledge from the five major sources of the language system: phonology, morphology, syntax, semantics and pragmatics. Phonology includes the phonemes or sounds and the rules regulating their combinations. Morphology involves language's smallest units of meaning, morphemes as well as the rules regulating word structures and their different forms. Syntax refers to the meaningful sequential arrangement of words. The semantic system is used to determine the meaning resulting from the organisation of the phonological, morphological and syntactic components. Pragmatics involves the uses of language in a sociolinguistic context (Swift 1988:320; Wallace and McLoughlin 1988:105,106).

In order to communicate via written language, one must be able to understand and speak the language. Readers decode print and construct meaning according to their knowledge of grapheme-phoneme rules, word ordering rules, passage structure and word meanings. Meaning is then effected by integrating this knowledge with the reader's understanding of how language is used in various contexts. As everyone's experiences are different, this will account for the many different interpretations of the same text (Heilman, Blair and Rupley 1986:4; Rhodes and Dudley-Marling 1988:25).

Learners are required to know their own cognitive processes and how to control them, in order to assimilate the great number of

cognitive abilities into one intricate operation to successfully complete tasks (Lerner 1988:186,187). This brings one to metacognition which Brown, Armbruster and Baker (1986:49) maintain plays a significant function in reading.

(c) *Metacognition*

Metacognition is defined by Wong (1986:12) as the inner awareness of one's own cognitive processes and the self regulation thereof. The Greek word *meta* signifies *going beyond* or *transcending*, metacognition is therefore literally cognition that goes beyond cognition (knowledge about the ordinary processes by which knowledge is acquired) thus cognition about cognition (McNeil 1987:91).

Metacognition refers to the awareness of person, task and strategy variables affecting cognitive performance along with the use of that knowledge to plan, monitor and regulate performance (Baker and Brown 1984:22). A discrimination is made by Flavell (1985:105-107), between metacognitive knowledge (self, task and strategy) and experience which are the here and now reactions (cognitive and affective) to the ongoing cognitive activity. Metacognitive knowledge about the self includes knowledge about one's own skills, strengths and weaknesses. Task knowledge refers to the knowledge about how the nature of the task influences performances on the task. Strategy knowledge is knowledge about the value of alternative strategies for promoting performance. Brown, Armbruster and Baker (1986:61-63) refer to two different types of strategies; 'fix-up' strategies and study strategies. Fix-up strategies (re-read, read on) are used to remediate comprehension failures. Study strategies (summarising, self-questioning, underlining) are used when reading to learn and

therefore understanding and remembering the information is required.

Metacognitive skills include self-monitoring, predicting, reality testing (using hypotheses) and coordinating the processes of studying and learning (De Bettencourt 1987:26). A metacognitive skill relevant to efficient reading and learning is the cognisance of one's own state of reading comprehension, that is metacomprehension (cf.2.3.3.1 (d)). An awareness of metacognitive skills greatly facilitates the pupil's use of applicable strategies.

The abovementioned are the most important elements necessary for adequate cognitive functioning to facilitate the reading process and can be summarised in the following diagram.

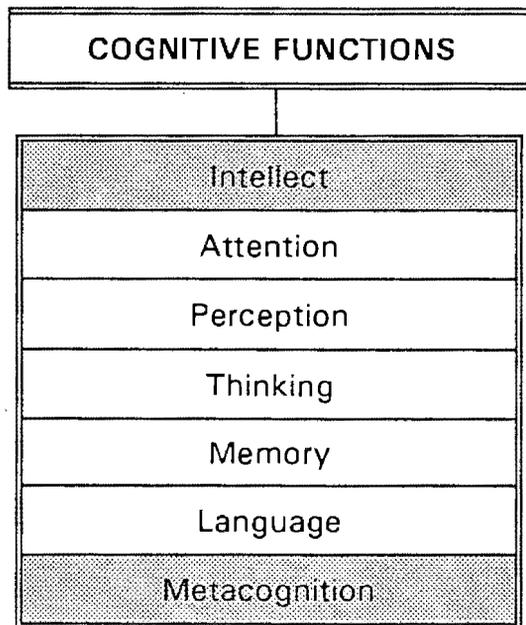


Figure 1

The cognitive processing concept is augmented by the information processing theory (Polson and Jeffries, 1985:418). For this reason the information processing theory serves as the base for the

description of the reading process in this dissertation.

2.2.2.2 *The reading process*

According to the information processing theory which is the principal theoretical framework proposed by the cognitive theorists and which is also relevant to this dissertation, reading is a process of communication. The author has a message for readers to read and comprehend. The implication being that readers need to play an active role in constructing the meaning (Gearheart and Gearheart 1989:290). The reading process will be described against the background of the information processing theory.

2.2.2.3 *The information processing theory*

Information processing is a complex theory explaining how information is acquired, interpreted, organised, stored, retrieved and implemented. The most recent simplified model of information processing by Swanson (1991:133) will be used to substantiate this description.

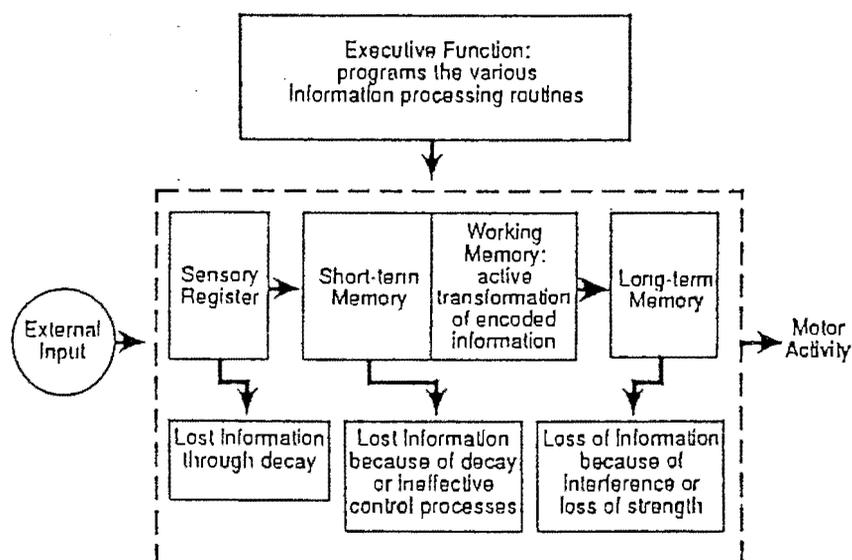


Figure 2

(Swanson 1991:133)

Learning is simultaneously a process and an outcome because information via the senses (external input) is received in the sensory register, augmented with prior knowledge existing within the brain (memory: short term and long term, and experience) and programmed and manipulated (the executive function) resulting in a response or performed activity (output performance) (Reid 1988:7). As Hall, White and Guthrie (1986:90) and previously Spiro and Myers (1984:483), point out that there are limitations in the capacity for processing information. One's system is limited in the amount of cognitive effort that can be supported at any time. This results in a sharing of the limited processing capacity.

A more detailed description of the process follows:

(a) *Executive function*

The executive function is responsible for the planning necessary to facilitate the different information processing procedures. Swanson (1987:3) refers to this as the control or strategy component which involves the description of the operations at different stages and the executive processes which include the learner's actions. Some examples of the operations are given. *Encoding* is the process whereby incoming information is analysed. The process of *elaboration* links material requiring learning with previously stored information. *Transformation* concerns the application of rules (which have also been stored previously) to incoming information. This incoming information must be stored with existing information for future reference and this is the *storage* process. When stored information is needed, the *retrieval* process accesses it for use via the process of *searching*. *Comparing* is the process of recognising whether incoming information is similar or different to the information in storage and whether information is old or new. When information has to be

changed in any way from its original form, *reconstruction* takes place (Swanson 1991:134,135).

The executive processes require learners to select and use their acquired strategies for problem-solving or task completion. Competent learners devise plans of action called strategies to allow them to gather information systematically in order to reduce confusion and increase chances of success (Lerner 1988:186,187). Learning strategies are procedures, rules or guidelines to assist in the acquisition, manipulation, integration, storage and retrieval of information in contexts and circumstances (Deshler et al 1981:421). Reading is dependent upon sets of rules requiring the reader to perform cognitive activities for meaning to result.

(b) *External input*

The external input is environmental information which enters the sensory register. In reading, the sensory input is the graphic information in the text.

(c) *Sensory register*

The sensory register is the initial store where all the information enters in sensory form: visual, auditory, tactile, kinesthetic and olfactory. It is believed that the information is to some extent an intact replica of the physical stimulus ready for further processing for a maximum of three to five seconds (Swanson 1991:141). The reading process requires that the reader attends and selects visual information for further processing. Motivation and interest on the readers' part, is also important and influences the control processes of attention and selection.

(d) *Short-term memory and working memory*

Short-term memory is the ability to recall information shortly after presentation. It is a theoretical intermediary in the information-processing system where incoming stimuli (for example, visual symbols) are held briefly for decoding purposes (retrieval and assignment of phonological and or semantic representations) and further processing (necessary for storage in long-term memory). Short-term memory is limited in size and unless information is processed further, it rapidly decays. It is often referred to as the working memory. Information is received from the sensory register and is represented in the short term memory in auditory-verbal-linguistic forms (Swanson 1991:140). Perceptual processing integrates the visual information in the brain for the graphic information to be interpreted. Multiple features of objects should be recognised. Encoding is the process involving the recall and organisation of internal meanings for communication and monitoring responses. It involves three subcomponents; recalling internal stimuli, organising internal stimuli and monitoring responses. In order to successfully encode, rules and generalisation must be precisely expressed and practically implemented with ease (De Ruiter and Wansart 1982:57). The capacity of short-term memory is affected by such factors as the ability of the individual to encode units or arrange the items for registering into smaller units, the information load, the similarity of items, the number of items processed during subsequent activities and the passage of time (Swanson 1991:142,143).

(e) *Long-term memory*

Long-term memory, on the other hand, is where the information is stored for recall after a long time has lapsed. The capacity of

long-term memory is unlimited and stored information is basically semantic (cf. 2.2.2.1 (iv)), (Swanson 1991:143). Knowledge is stored differently in memory, according to type, in disparate sized units and varied levels of complexity. Three types of knowledge exist, declarative, procedural and conditional. Declarative knowledge includes facts, word meanings or other data. Procedural knowledge is knowledge of procedures for the practical implementation of activities and conditional knowledge is the information about when and why to perform various activities (Reid 1988:7). Declarative knowledge for *reading*, involves an understanding of what factors influence reading. Procedural knowledge reflects an appreciation of how skills operate and conditional knowledge involves the understanding of why and when particular strategies are necessary and why they affect reading (Cross and Paris 1988:131). The use of links, association and general organisation plans, facilitate storage of information but interference or loss of information results in forgetting (Swanson 1991:143). A significant process for reading is lexical access which is the recognition of a word stored in long-term memory. Good lexical access is evident in larger vocabularies, more semantic details and more schemata (Perfetti 1986:14).

(f) *Motor activity*

The motor activity is the output performance which in this case would be the act of reading with meaning.

In order to illustrate how information is processed, three examples of the *information processing theory* of reading, the bottom-up approach, the top-down approach and the interactive approach will be presented. Reading is seen as active communication between the sender/author and receiver/reader using specific knowledge

(Gove, 1983:262).

The *bottom-up approach* emphasizes the text. Reading is seen as an hierarchical process which originates with word recognition skills (letters, letter/sound relationship, words) and includes stages (storing, integrating and retrieving information). Accuracy in decoding skills is emphasised as each word must be recognised to facilitate comprehension. A progression from letters to words, to sentences and finally to meaning of passages is evident. Achievement in reading is as a result of proficiency in assimilating sequences of word recognition skills or graphophonic cues (Lamb and Arnold, 1988:5,6).

The *top-down approach* emphasises the readers' prior knowledge (past experiences with language and the world) and assumptions. Therefore in spite of not being able to decode each word, meaning can result through predicting. Decoding unknown words takes place by using graphic cues supplemented by meaning and grammatical cues, thus the formation of the author's message will be largely influenced by syntactical and semantic knowledge. Reading for meaning is significant and therefore there is a greater emphasis on the abilities of the reader to question, hypothesise and comprehend. There is also evidence of strategy usage. As such, reading is more than graphophonic knowledge (Lamb and Arnold 1988:5,6; Gove 1983:263).

When a reader is familiar with a topic he/she will have vocabulary, concepts and experiences available. It will therefore not be necessary to pay close attention to the words themselves and their components. There is a dependence on cognitive data (top-down part) to analyse information (Heilman et al. 1986:5). However, for Reid (1988:9), reading is an interactive process and not one with

a fixed sequence (from bottom to top/top to bottom).

The assumption of the *interactive approach* according to Beck and McKeown (1986:115), is that graphic information and the knowledge of the reader interact with each concurrently. Graphophonemic knowledge (orthographic and lexical) and knowledge structures (semantic and syntactic knowledge) integrate to organise knowledge about the graphic input, classify it and assimilate it with prior knowledge for meaning to result. That the subprocess of decoding is automatic, makes a significant difference as it allows attention to be focussed on higher level subprocesses such as inferencing. The necessity for interaction between the bottom-up and top-down models is clearly evident in the statement by Pearson and Johnson (1976:15):

"Comprehension is easier if you can read the words accurately and automatically, but reading the words is easier when you can understand the message."

Learning to read therefore begins long before formal schooling and is a very complex and interrelated process, as was indicated in this very brief exposition. For the accomplishment of any reading purpose, reading readiness is a prerequisite.

2.2.3 Reading readiness as a prerequisite for reading

Readiness is concerned with the developmental level required for effective learning to take place. Mental maturity, visual abilities, speech and language development, thinking and attention skills, motor development, social and emotional maturity and interest and motivation are all contributory factors to reading readiness (Mercer 1987:377). The process of reading changes from initiating

meaning from context to an almost complete dependence on symbols (Reid 1991:370).

Whether one is preparing children to read for the first time, providing additional reading instruction, or preparing a group to read a specific text, readiness to read is necessary. Reading readiness involves the preparation of pupils for reading by providing experiences, schemata and vocabulary so that new information can be related to the old information. Readiness is closely related to the level of difficulty as new learning experiences for which pupils have not been adequately prepared prove difficult, resulting in frustration and diminished self esteem as opposed to the fulfilment of learning (May 1986:172,).

Intelligence and language development or linguistic skills are important fundamentals in learning and reading readiness Dednam (1992:116). Schematic, syntactic and semantic cueing systems develop long before pupils arrive at school through oral language experiences. Pupils apply their own personal schemata to semantic and syntactic cues from their oral language experiences. Therefore, in preparing pupils to read, it is important for teachers to have a good knowledge of pupils' existing associated language experiences as well as those language experiences which will be required by the pupils (May 1986:173).

On a perceptual level, meaning must also be made of incoming sensory stimuli. In order to read one needs to be able to identify the graphic symbols, see and remember them in sequence as words which in turn form sentences. Readers need to use smooth eye movements from left to right and be able to pay attention to that which is relevant and not the irrelevant (Dednam 1992:116,120; Mercer 1987:230,231).

Visual perception includes the visual skills necessary to perform these activities: visual and figure ground discrimination, form perception, tracking, visual closure, visual memory and spatial relationships (cf. 2.2.2.1 (b)). The letters have sounds and these need to be matched to form words and finally sentences. Sounds need to be discriminated, heard and remembered in a sequence, therefore auditory perception is important. The auditory skills necessary are sound perception, localisation of sound, discrimination, memory and analysis and synthesis (cf. 2.2.2.1 (b)).

The intact functioning of all the abovementioned aspects is a prerequisite for reading readiness.

In his reference to the history of reading instruction, Cooper (1986:3) notes that during the 1960s and 1970s, it is recorded that the decoding of reading was given pre-eminence as it was still supposed that the ability to recognise words automatically resulted in successful reading comprehension. However, it was soon realised that this was not the case. The result was the recognition that a focal change in reading instruction which exhibited the interactive view of reading was needed. The interactive view is described by Maria (1990:52) as an alliance between word recognition and comprehension, the two major components of reading.

2.2.4 Components of reading

2.2.4.1 *Introduction*

Successful reading requires the recognition and analysis of words (word recognition) and the understanding of words and ideas

(comprehension) (Heilman et al 1986:6; Ekwali et al 1988:73). These two major components are interdependent in that they complement each other and are dependent upon one another to be fully understood. However, to facilitate explanation in this dissertation, they have been separated. Diagrammatically therefore this can be explained as follows:

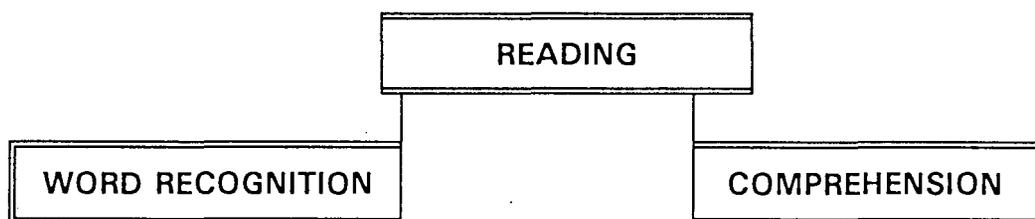


Figure 3

Word recognition involves the recognition of sight words and the use of word attack skills in order to analyse and synthesise words as is indicated in figure 4.

2.2.4.2 *Word recognition*

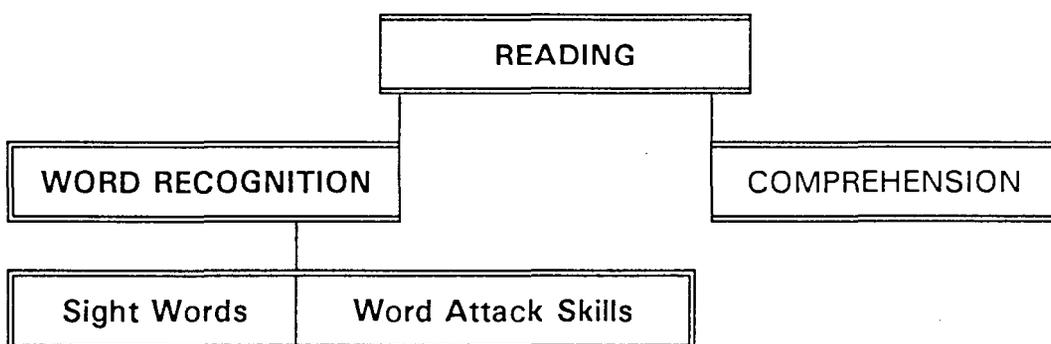


Figure 4

When words can be recognised immediately they are classified

as *sight words*. As such the criteria is the automatic recognition without requiring decoding. However, these words may not necessarily form part of the pupils' *meaning* vocabulary. Sight words can be classified into two categories. Basic sight words are high frequency words and those words not requiring word attack skills are referred to as other sight words (Ekwall et al. 1988:74).

When words cannot be recognised automatically, readers need to analyse them to facilitate recognition. These are the *word attack or word analysis skills* and several examples follow. Readers can use clues to analyse words. Contextual clues are those clues in the surrounding words and their meanings and picture clues are those from any accompanying pictures. Configuration clues are visual clues which assist the reader. They include the shape or length of the word (aeroplane, hen), whether the word is in capital or lower case letters (AEROPLANE aeroplane), extenders (h,b) and descenders (g,q) may be used as may double letters (see,make). The use of redundant language is encouraged. Use can also be made of structural analysis, sometimes referred to as morphology, which includes word units (prefixes, suffixes, root words, compound words and syllables). When one reads, letters have to be matched to their sounds (grapheme-phoneme matching) and this is governed by several rules all falling under the umbrella of phonics. Phonetic analysis requires a knowledge of phonic rules such as consonants, consonant blends, consonant digraphs, vowels vowel digraphs, special letter combinations and syllabication. Dictionary skills can also be encouraged (Ekwall et al. 1988:74,75). At secondary level, vocabulary becomes more complicated in that there are three types. Not only is there a general vocabulary of common words with regular meanings but

also a special vocabulary where the text will dictate whether the regular or special meaning of the word is required. In addition there is a technical vocabulary expressing concepts as per the subject content of the text (Gartland 1990:230).

The ability to recognise sight words and decode, through the use of word attack skills, results in successful *word recognition*. Although word recognition fluency affects reading comprehension, it is not enough to allow for the perception of meaning as more complicated aspects are involved. When readers understand what the symbols represent, reading comprehension will occur.

2.3 READING COMPREHENSION

2.3.1 Introduction

Reading comprehension is an ability which is not observable as it occurs in the mind. In order to explain it, one has to depend on observable behaviours which would give an indication as to whether comprehension has taken place. There are ample behaviours such as, the reader's knowledge of syntax, knowledge of the world, schema, and the use of psycholinguistic processes, to name a few, which give an indication of the variety of concepts incorporated in reading comprehension (Finn 1985:156). The view of Anderson and Pearson (1984), that the prevailing perspective of comprehension is a "process by which the reader constructs meaning by interacting with the text", is cited by Cooper (1986:3). This can be diagrammatically explained as:

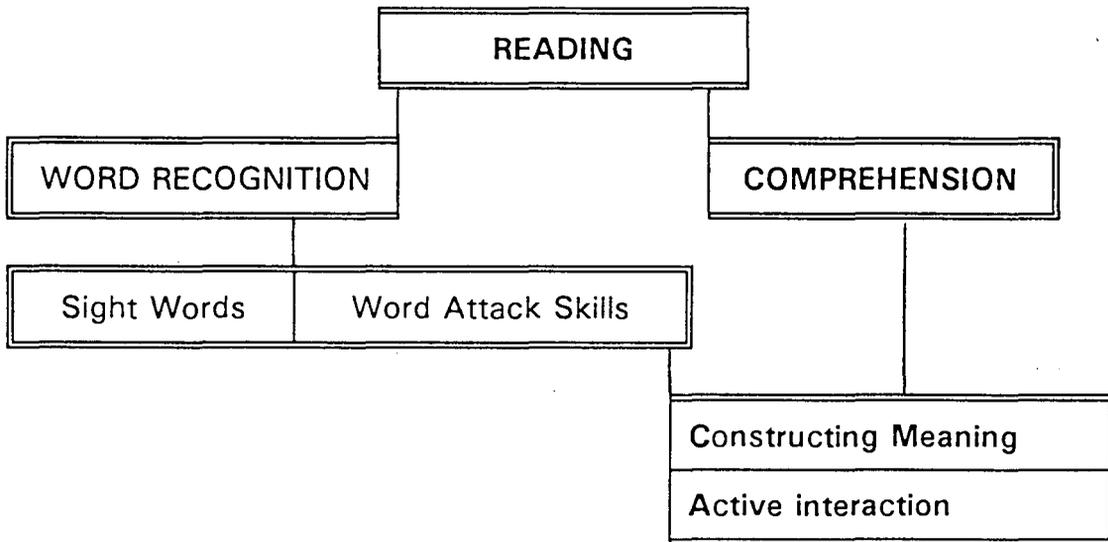


Figure 5

2.3.2 Constructing meaning

As is the case with reading, there are several definitions of reading comprehension. However, in this dissertation, the definition of Maria (1990:14), (cf. 1.2.5), will be used because of its interactive and holistic nature and its emphasis on the construction of meaning. Maria regards reading comprehension as:

"...the holistic process of constructing meaning from written text through the interaction of (1) the knowledge the reader brings to the text, i.e., word recognition ability, world knowledge, and knowledge of linguistic conventions; (2) the reader's interpretation of the language that the writer used in constructing the text; and (3) the situation in which the text is read".

For Cooper (1986:3), the basis of comprehension is the interaction between the reader and the text. Meaning is

constructed when the information in the text is integrated with the reader's prior knowledge. Prior knowledge includes the reader's knowledge of language (linguistic conventions (Maria 1990:14)) and word and world knowledge. It is this integrating of new and old information to form meaning that is for Cooper (1986:3) the process of comprehending. Reading comprehension requires active interaction of the reader, the text and the context. The factors affecting the reader are internal, whereas the text and the context are external.

2.3.3 Active interaction

According to Annis (1985:5), one of the most significant aspects of the information processing approach is that it sees the learner as an active agent in learning, thus the reader in reading.

2.3.3.1 *The reader*

The reader has an extremely significant role to play and the factors affecting comprehension will be considered according to, linguistic competence, world knowledge, interest and motivation and metacomprehension. Firstly, linguistic competence, specifically phonological knowledge.

(a) *Linguistic competence*

Linguistic knowledge provides one of the most efficacious cuing systems in reading. *Phonological or word knowledge* is a blanket term alluding to the abilities necessary for the deliberate analysis and manipulation of the sound structure of spoken words (Ehri 1989:356). It consists of two types of knowledge:

lexical and orthographic. Lexical knowledge is one's own concordance of word meanings. It includes knowing the sequence of letters in specific words and the knowledge of how these represent phonemes in words (Samuels and Kamil 1984:190). Orthographical knowledge involves the ability to use phonological codes to decode, make spelling to sound correspondences and grapheme-phoneme conversions. Prerequisite skills for successful phonological processing include: auditory discrimination, figure ground, sequential memory, analysis and synthesis (cf. 2.2.2.1 (b), (Reid 1988:166; Sutaria 1985:229). In order to construct meaning from text, pupils need a sight vocabulary, phonological awareness and related skills culminating in the development of a flexible decoding process. The level of automaticity in the application of orthographic knowledge influences fluency in reading (Lerner 1988:185,353; Reid 1988:161).

Reading comprehension will be influenced by a limited sight vocabulary possibly due to difficulties in the acquisition thereof. An inability to decode automatically as a result of a possible lack of orthographic knowledge will have a negative influence. An inability to discover hints about sound-symbol relationships will result in a dependence on direct orthographic instruction. An inability to generalise orthographic knowledge will also influence reading comprehension negatively (Gaskins, Downer, Anderson, Cunningham, Gaskins and Schommer, 1988:37,41).

Syntax refers to the orderly arrangement of words in sentences according to organised procedures. The study of syntax involves studying how words are sequentially arranged for meaning, that is the grammatical structure of written material (Kauffman and Hallahan 1981:150; Hallahan, Kauffman and

Lloyd 1985:204). Syntactic knowledge and the sentence context of the words, allows the reader to make use of contextual clues when trying to identify unfamiliar words. Use can also be made of redundancies to give clues about unknown words, conjectures and guessing through the meaning in context. Reid (1988:168) is of the opinion that when the context is intense, very little information is necessary for the identification of unknown words.

Reading comprehension will be influenced by an inability to use redundant sentence information to facilitate word recognition (Patberg, Dewitz and Samuels 1981:46). Literal wh-questions (cf. 2.3.4.1) can be answered exclusively on the foundation of syntactic relations. Wh-meaning units facilitate the ability to predict, identify and construct text meaning (Reid 1988:169,170). Wong (1991b:14), mentions that there may be an insensitivity to significant textual information resulting in an inability to focus attention or engage in active comprehension and study efforts on important factors.

A third aspect of linguistic competence is *semantic knowledge*. Semantics refers to the meaning of language. Semantic knowledge in the form of cues assists in decoding and understanding the meaning of the printed text through vocabulary usage, concepts that develop and word association. Whether there is a surface or deeper meaning is dependent on the reader's understanding of individual words, applicable word order and the concept communicated in the sentence. Academic difficulties are influenced greatly by semantic deficits, as without an understanding of word meanings, concepts cannot be learnt (Gearheart and Gearheart 1989:372).

Comprehension will be influenced by an inability to monitor meaning while reading (Ryan, Weed and Short 1986:383). A limited vocabulary understanding and practical implementation as well as a limited ability to associate words and their meanings will affect reading comprehension (Lerner 1988:319).

The significance of the reader's prior knowledge is also confirmed by Lamb and Arnold (1988:7), who maintain that the reader's performance will be affected by the availability of the prior knowledge.

(b) *Prior knowledge*

Prior knowledge is the information which is stored in one's long-term memory (cf. 2.2.2.3 (e)). Prior knowledge, when activated, contributes significantly to successful reading comprehension as it is used to generate new knowledge. (Harris and Sipay 1985:480). In order to illustrate the significance of the reader's knowledge for meaningful comprehension to take place, the following passage by Bransford and Johnson (1972:722) will be used:

"A newspaper is better than a magazine, and on a seashore is a better place than a street. At first it is better to run than to walk. Also you may have to try several times. It takes some skill but it's easy to learn. Even young children can enjoy it. Once successful, complications are minimal. Birds seldom get too close. One needs a lot of room. Rain soaks in very fast. Too many people doing the same thing can also cause problems. If there are no complications, it can be very peaceful. A rock will serve as an anchor. If things break loose from it, however, you will not get a second chance." (Bransford and Johnson 1972:722).

Without a frame of reference the reader will experience difficulties. However, the knowledge that the title of the passage is "Kites" makes a significant difference. Prior knowledge is therefore essential for making inferences and predictions as it allows inferential elaboration to take place unconsciously. The gaps of information which are not provided by the author are supplied from one's own prior knowledge.

Every reader has background knowledge from experiences with people, events, places and objects. This knowledge forms a frame of reference and has a significant part to play in the assimilation of new information. Knowledge also provides the required vocabulary for the understanding of the text (Carpenter and Just 1986:18).

In order to understand textual information, readers must be able to make inferences. These inferences are largely dependent on the reader's prior domain knowledge. A discrimination can be made between world knowledge (an all embracing term) and topical knowledge (specific knowledge about the particular topic). Other types of prior knowledge include scriptal knowledge which is knowledge about usual occurrences in everyday activities. The knowledge of role themes includes expectations of how one conducts oneself in certain roles as defined by society. The knowledge of human nature and knowledge of goals and plans for achieving goals are further examples of prior domain knowledge (Harris and Sipay 1985:480,481).

The *schema theory* endeavours to account for the way in which knowledge is symbolised in the mind and how the symbols promote the use of knowledge. Wilson and Anderson

(1986:33) describe a schema as being an "abstract structure of knowledge" and qualify this by saying that it is structured in that it specifies associations between the concept components. Its abstractness is evident in its ability to encompass several texts differing in details. Schemata are units containing knowledge and these form schemas or "packets of knowledge" which serve as a summary of one's knowledge about a particular concept and the relationships between the bits of information. Schemata may be modified by added information. Schemata are also probably hierarchically arranged and when one is reading, hypotheses are formulated with regard to the interaction between the schemata and the information contained in the text. The hypotheses are continuously clarified, changed or relinquished (Harris and Sipay 1985 480,481). For successful comprehension, schemata containing literal and inferential knowledge are activated to facilitate the processing of new information. When new information agrees with one's schema, encoding to memory (cf. 2.2.2.3 (a)), can take place. Information which does not meet expectations is rejected, and missing information is inferred from background knowledge. The significance of readers' background experience cannot be underestimated. Specific functions of schemas are that they provide ideational scaffolding through the way the information is structurally organised. They control the assignment of attention in assisting decisions of what is important or familiar. Schemas make inferential elaboration possible because they provide the implicit information to facilitate comprehension. Schemas make systematic memory searches possible and editing and summarising are promoted. Inferential reconstruction is facilitated by schemas whereby a reader's schema and text information can be connected to facilitate the formulation of hypotheses about the information which is missing (Wilson and

Anderson (1986:35,36).

An important component of background experience is *language development and growth*. Heilman et al (1986:191), identify the following factors which affect the comprehension of the printed text; oral language related to real objects, experiences and pictures, the ability to listen with understanding to stories read aloud, firsthand experiences with people, objects and places, the continuous development of one's listening and speaking vocabularies, oral language development of syntactic and semantic features of our language and the method of expressing the message (language usage).

A knowledge of the world, language and print structure are prerequisites for predictions to be made confidently. Predicting is a strategy which facilitates the forecasting of what may follow, for example, the author's message as a whole or what may happen in the next paragraph (Rhodes and Dudley-Marling 1988:29,30).

Successful reading comprehension may be impeded when readers do not have the necessary prior knowledge or do not activate it through retrieval (2.2.2.3 (a)). They may experience difficulties understanding the relationships between the facts they do know regarding the topic. Reading comprehension is also affected if readers rely too much on the text without paying the necessary attention to their knowledge or they may rely too much on their knowledge without attaching the necessary significance to the text (Harris and Sipay 1985:482,483).

Maria and MacGinitie (1982:41), refer to two types of poor comprehenders. Type one readers use a fixed-hypothesis

strategy whereby they form premature impressions after reading a few sentences and then try to interpret the rest of the text accordingly. This can be rigid. Type two readers make use of a non-accommodating strategy whereby no significance is attached to the text and neither is it used to accommodate new information. The textual information is regarded as a repetition of their existing information. Type two poor comprehenders will experience considerable difficulty learning from expository text especially when new information is included. For pupils with poor metacognition, this will be an additional problem as they usually do not know what they know.

Comprehension will be influenced by the reader having inappropriate schemata, if schemata are not activated as a result of the insensitivity of the reader to textual cues and the interpretation by the reader may be inconsistent with the author's intentions (Rumelhart 1984:18). If the reader reads without possessing and activating topic knowledge, comprehension will be affected (Reid 1988:171). Finally, if knowledge is not utilised to infer cause and effect relationships, a lack of comprehension may result (Wong 1980:36).

A thorough topic knowledge and interest are related, therefore interest is a motivating aspect in reading comprehension.

(c) *Interest and motivation*

Interest is decisive in one's assignment of time and efforts and this is also true of reading (Harris and Sipay 1985:449).

Previously it was mentioned that learning to read is a long-term process. Perseverance is therefore a prerequisite for success. For Masters & Mori (1986:108), there is considerably more to

the teaching/learning process than instruction in the application of learning strategies. Affective factors as in personality, motivation, self control and one's intrinsic attributions to problem-solving, must be taken into account and attended to.

Motivation can be affected by the expectations of parents and teachers. Peer pressure also influences motivation and if academic achievement is low on the priority list of the peer group, pupils will not be motivated to achieve. This is especially applicable to secondary school pupils (Maria 1990:36). It is also necessary for pupils to understand and be aware of the advantages of learning strategies as there is an element of risk and considerable time and effort required on their part. One of the means of motivating reading is to ensure that pupils read topics of *interest*.

Pearson and Johnson (1976:13), are of the opinion that interest plays a significant role in comprehension and Maria (1990:36), verifies this in her mention of pupils who have been known to read and comprehend texts presumed to be too difficult merely because they have been topics of interest. They possessed the required prior knowledge and vocabulary to be able to use contextual cues.

Reading Comprehension will be influenced if pupils are listless, inattentive, lack perseverance, do not complete tasks and are not motivated or interested in reading.

Reading for meaning is basically striving to comprehend, and any attempt to comprehend must involve comprehension monitoring which is an integral facet of metacomprehension.

(d) *Metacomprehension*

Metacomprehension is the knowledge and control readers have over their own cognitive activities during reading (Reid 1988:14). Metacomprehension necessitates that readers know about reading and reading task requirements, that they know themselves as readers and have a knowledge of strategies and strategy applicability according to task requirements (Maria 1990:31-34; Wong 1991a:11).

Comprehension monitoring is one of the cognitive abilities crucial for progress in reading comprehension as it is necessary to know when one does not understand what they are reading and then what to do about it. Evaluation and regulation are the two components of comprehension monitoring. Evaluation involves knowing about comprehending through self evaluation of one's own competence, and regulation involves knowing how to comprehend by taking appropriate action to correct failures using strategies (Chan, Cole and Barfett, 1987:114). A susceptibility to errors and alternatives for the remediation thereof are prerequisites for successful monitoring (De Ruiter and Wansart 1982:56). Examples of comprehension monitoring strategies are: making inferences, hypothesising, re-reading a passage, reading on and ignoring trivial confusions (Schewel and Waddell 1986:20).

Reading comprehension will be affected by a lack of understanding of the goals of reading, an inflexibility in applying strategies for different reasons and an inability to identify main ideas in a passage. The inability to recognise the inherent logical structure of the text will affect reading comprehension negatively as will the inability to take cognisance of the relation

between old and new information. A lack of attention to syntactic and semantic constraints, not evaluating the text for clarity, completeness and consistency, not regulating comprehension failures and not monitoring comprehension are additional factors (Baker 1982:30).

Diagrammatically the above information is summarised in figure 6.

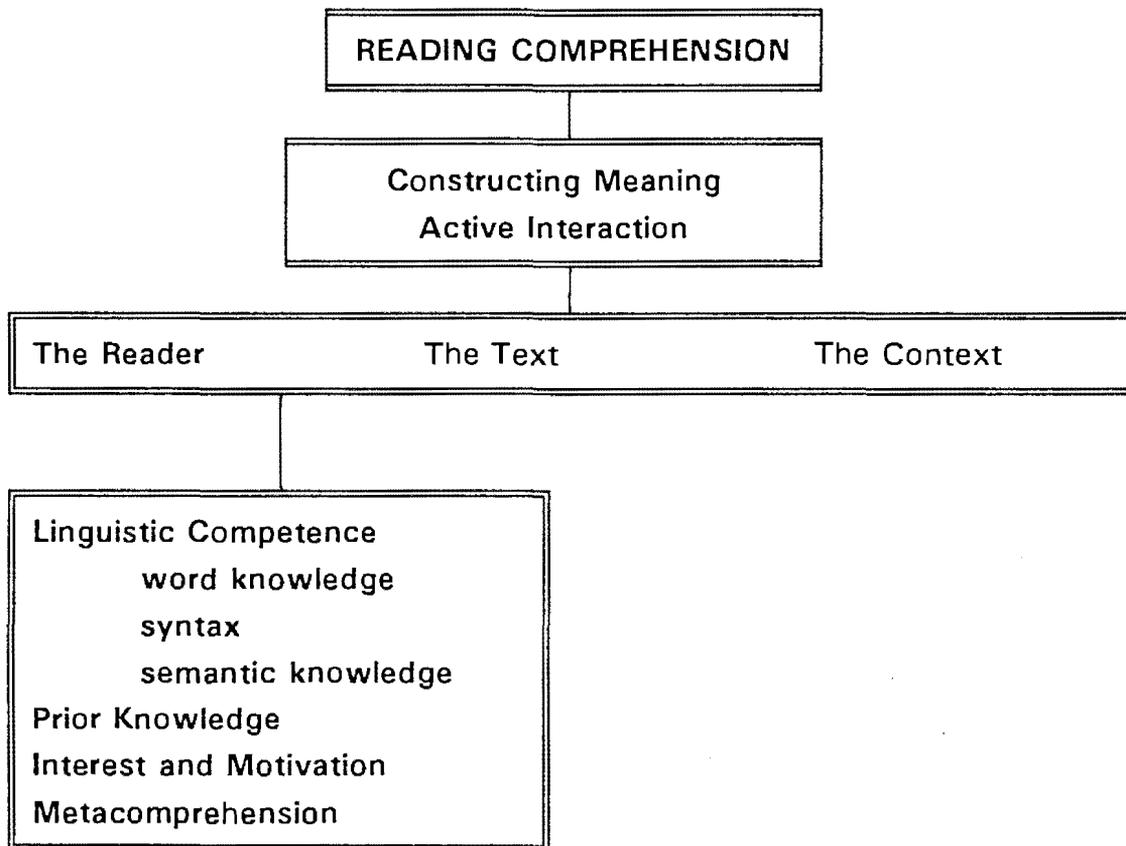


Figure 6

The second main component in reading comprehension is the text which is the written language or graphic information. The reader's interpretation of the text will be affected by how well the text is explained and organised (Lerner 1993:400).

2.3.3.2 *The text*

In order to interpret what is being read readers must integrate the textual information with their prior knowledge and monitor their understanding thereof. The text which is an external factor, plays a critical role in facilitating successful comprehension. The nature of the text is one of the four factors specified by Campione and Armbruster (1985:331) as affecting textual learning.

The *nature of the text* is evident in the three main categories of texts which have been identified as being used in the schools. These are basal readers, content area textbooks and trade books or children's literature (Maria 1990:38). As the focus of this dissertation is on the secondary school pupil, attention will be paid to content area textbooks.

(a) *Content area textbooks*

It would seem that most teachers of content subjects believe that instruction in the reading process is not the aim of textbooks but rather to provide learning content. Confirmation of this is evident in following claim made by Heilman et al. (1990:277),

"...although you could make a case for more than one neglected area in a school's curriculum, the area of reading in content subjects (expository texts) is probably the most important".

The research of Readance Bean and Baldwin (1992:5) revealed

several underlying assumptions and misconceptions on which content teachers seem to have based their views and these could be the reason for the neglect of teaching reading in the content subjects.

Teachers in secondary schools believe that the teaching of reading took place in the primary school and therefore assume that the pupils know how to read. Their task is seen as one of providing information. They presume pupils have the required prior knowledge to be able to deal with the significant textual information with which they will be presented. Their view of content reading is one of teaching phonics and additional reading skills which are unrelated to their subjects. They are of the opinion that the processes required for successful reading comprehension are similar to those used when reading basal readers in the primary school situation. They see the responsibility for the pupils who do have reading difficulties to be as that of the remedial teacher and therefore the skills required for successful subject matter reading must be taught by him/her. For Readance et al. (1992:5), assumptions that pupils, on entering the secondary school situation are proficient in the skills required to identify important information, use textbooks and successfully relate old information to the new information are fallacious.

Chipman and Segal (1985:1) testify to the fact that many teachers believe that subject content can be learned better through oral presentation than by reading and therefore textbook reading is not considered a significant aspect of learning content instruction. They believe that by doing this, teachers are neglecting the significant long-term goal of encouraging students to become independent learners. For Maria (1990:42),

this neglect of teaching pupils how to acquire information from the text manifests in illiteracy in our present advanced technological society.

Another area of difficulty according to Wittrock (1981:231), is that in order to encourage accurate recall and understanding, ideas in texts are sometimes isolated from readers' experiences and knowledge. This results in pupils not generalising and transferring information but reproducing it to fulfil specific goals like examinations.

The organisation of the text contributes significantly to successful reading comprehension.

(b) *Text organisation*

Texts are organised as narrative or expository. *Narrative text* is writing which gives an account of or tells a story and it comprises a setting (main characters, time, place), problem (initiating event), internal response and apparent problem-solving endeavours, outcomes of endeavours and the conclusion of the story (Slater and Graves 1989:141-144). Basic concepts such as the role of language in communication, the nature of the reading act (including the roles of an author and reader), the types of genre and the previously mentioned primary characteristics are developed through the use of literature, poetry and drama in narrative reading (Smith-Burke and Ringler 1986:217).

Expository text is used to inform readers. It is explanatory in that the required explanations are presented for the comprehension of the given information. Expository text is

directive as readers are provided with hints or suggestions in the form of introductions, subheadings and summaries to emphasise significant information and discriminate between relevant and irrelevant information. Expository reading centres on the comprehension of content area matter such as social studies and science (Smith-Burke and Ringler 1986:217), and can include a narrative component in the form of stories or anecdotes to facilitate interest and comprehension (Slater and Graves 1989:141-144). As the aims of expository and narrative texts differ, therefore their structures will differ.

In order for the author to communicate his message, the ideas must be coordinated and *text structure* is concerned with how this is done. Text structure also stipulates the coherence of the ideas and the subordination of some ideas to other concepts (main ideas/supporting information). This can be done on three levels, as a sentence, a paragraph and a top level structure (Harris and Sipay 1985:485).

The register, cohesion and structure of a text are significant textual elements, according to Eden (1991:8,9). She defines the register of a text as the language style relevant to its context and aim. Eden continues by postulating that pupils need to be encouraged to become acquainted with the impersonal register of information books generally and each subject specifically. This can be done through the use of abstract words not conducive to imaging, nominalisations as opposed to active verbs and a greater utilisation of the impersonal passive voice and modal verbs. Use may also be made of complex sentences and the exclusion of clause markers. Ellipsis, concealed negatives and different word order for linkage or emphasis are additional examples.

The cohesion of the text is necessary to make sense of it. The ideas need to merge fluently and in order to accomplish this, the content of the text must be systematically organised and linked. Armbruster (1984:203,209), distinguishes between global and local coherence. Global coherence is attained through the comprehensive textual structure and organisation using such structures as, temporal sequence (first, second, finally), comparison/contrast (in contrast, but, similarly) enumeration or collection, problem/solution, cause and effect and description. Local coherence is attained by using various fundamental ties to cohere ideas within and between sentences such as reference group, substitutions, ellipsis, conjunctions and lexical cohesion. For Englert and Thomas (1987:93), cohesive ties are significant cueing systems used to convey text relationships and the inferiority of some concepts to others.

Exposition/transactional writing is characterised by categories of structures: description (definition, division and classification, compare/contrast), illustration (analogy, example), sequence, cause and effect, argument and persuasion (deductive and inductive reasoning, persuasion), functional (introduction, transition and conclusion), (Calfee and Curley 1984:161-180, Eden 1991:9).

Comprehension and recall is affected by the reader's lack of knowledge regarding the register of a text and susceptibility to text organisation. Text structure affords a significant foundation for readers to determine main ideas, predict and identify relevant material (Reid 1988:171). Examples of the possible negative effects on the cohesion of the text given by Beck (1984) are cited by Harris and Sipay (1985:484). Reading comprehension will be negatively affected if ambiguous, obscure

or indistinct terms are used or the text may be unfamiliar. The relationship between story events may not be explicit and ideas or events not pertinent to the situation may be included. Comprehension will be affected by readers focussing on irrelevant details (Hansen 1978:68). It will also be affected by a lack of awareness of potential confusions caused by inexplicable or irrelevant events (Bos and Filip 1984:231; Englert and Thomas 1987:102).

(c) *Content and topic*

Prior knowledge of the reader and the content of the text interact to produce comprehension. Text content also interacts with pupils' interest and motivation (Maria, 1990:48). It is the exception rather than the rule if a text book's content and topics are of interest to pupils as they are dictated by syllabus requirements. The findings of Armbruster (1984), are cited by Maria (1990:49), that had the motivations and goals (if they existed), in learning specific subjects been alluded to, greater success in reading comprehension and recall of facts would have resulted. An additional finding was that there was a lack of clarity as to the significance of the facts to be learnt.

Easy vocabulary, short simple sentences are often used to facilitate a lower readability level, but they are not adequate to relay complex concepts thus texts appear to hint at subjects not allowing for the depth necessary (Pearson and Johnson 1976:17).

(d) *Language*

An interaction is also evident between the language of the text

and the language ability of the reader. In both reading and listening comprehension, the skill depends on the individual's ability to utilise and understand language, their familiarity with the content of the material and their ability to attend to and actively interact with the author or speaker's concepts (Lerner 1981:311).

(e) *Frequency and abstractness of words*

Evidence confirms that passages consisting of infrequently used words are more difficult to understand (Pearson and Johnson 1976:15). This would also appear true for meaning selection of abstract words and the reading of passages containing many abstract words (Pearson and Johnson 1976:16).

(f) *Word identification of text book vocabulary*

Reading comprehension is jeopardised when word identification processes are not automatic and readers have to devote all their energy to decoding the words. General, special and technical vocabulary (cf. 2.2.4.2) are the three types of vocabulary with which pupils at the secondary level have to contend.

The factors affecting the reader's interpretation of the text are summarised in the following diagram.

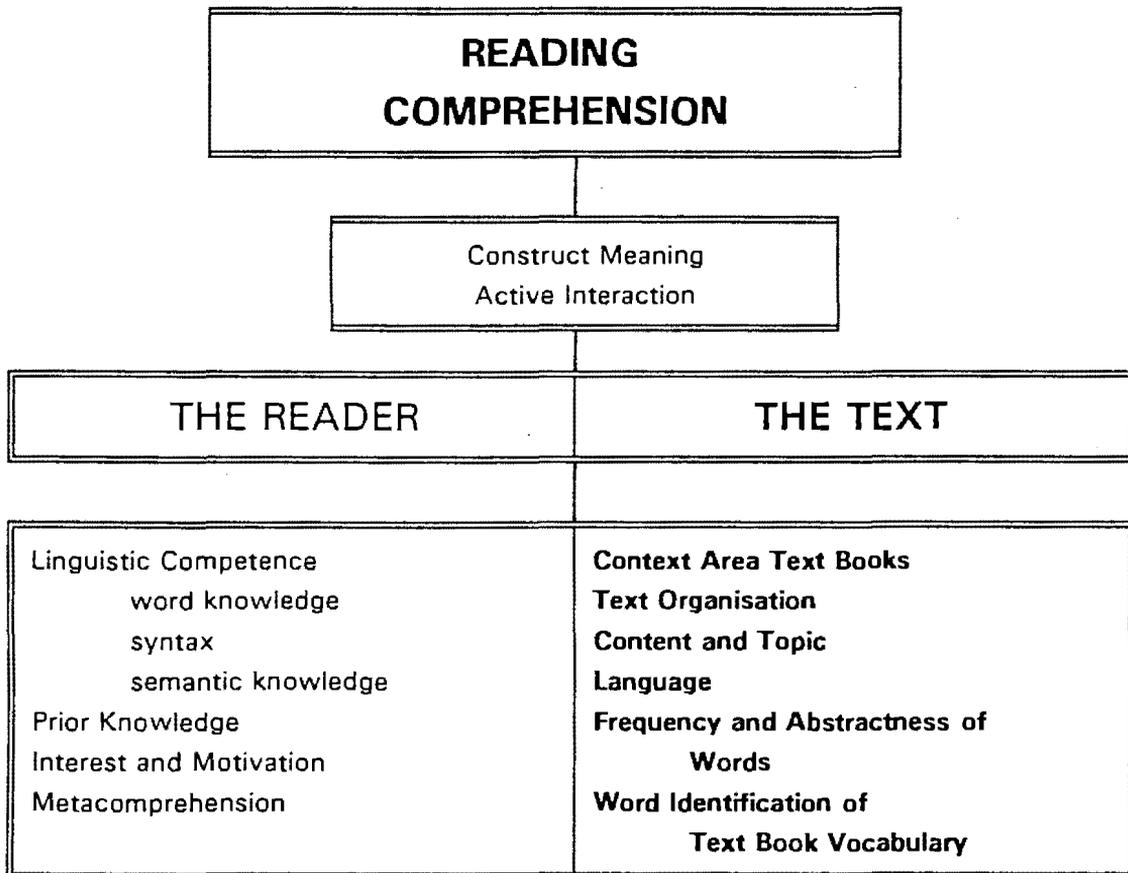


Figure 7

According to the definition (cf. 2.3.2), the situation in which the text is read, or context, is the third main component which interacts to facilitate reading comprehension.

2.3.3.3 *The context*

The context is an external factor affecting reading comprehension. In this dissertation the pupils in the secondary school are the focus of the attention therefore the classroom forms the context. The teacher, the classroom environment and peers are considered.

For Mosenthal (1984:17):

"...the most important context influencing reading comprehension in classroom lessons may be the interaction between the teacher and the students".

A vital arena for *teacher-pupil interaction* is the instruction of reading and there are several ways in which teachers directly influence reading comprehension. Their influence is seen in the way in which pupils are prepared for reading and the choices they make regarding the type of instructional materials used for reading. How teachers interact through their questioning, feedback and the type of motivation and reinforcement they use will also affect comprehension as will the teacher's modelling behaviour and the atmosphere created in the classroom (Pearson and Johnson 1976:19). As it is of particular significance to this dissertation, chapter four has been assigned to reading instruction.

The *goals and purposes* of specific reading tasks will influence reading comprehension. Teachers and pupils can set their goals and purposes on their own or together. Goals need to be explicit and clear and teacher's can contribute significantly in this area with their knowledge of the pupils' strengths, weaknesses and home backgrounds (Lamb and Arnold 1988:329). The type of task and associated goals and purpose will also affect the fundamental thinking of comprehension (Pearson and Raphael 1990:224).

Assessment, where observation on a daily basis is seen as a very significant factor in the classroom environment, can influence and contribute to the pupils' progress in comprehension. This is especially so if it is combined with

standard test measures (Lamb and Arnold 1988:329).

The physical and emotional environment must be conducive to learning. Physically, the environment should be warm, supportive and stimulating with many resources available for pupils to use. Emotionally pupils must feel secure to venture and take risks to facilitate learning experiences.

Peer influences will have an affect on reading comprehension. Peer influences can be positive or negative and the teacher needs to be in control at all times to avoid any nastiness which could result in pupils avoiding reading tasks (Pearson and Johnson 1976:19)

Factors affecting the context complete the diagram which serves to summarise the components that actively interact in order to construct meaning.

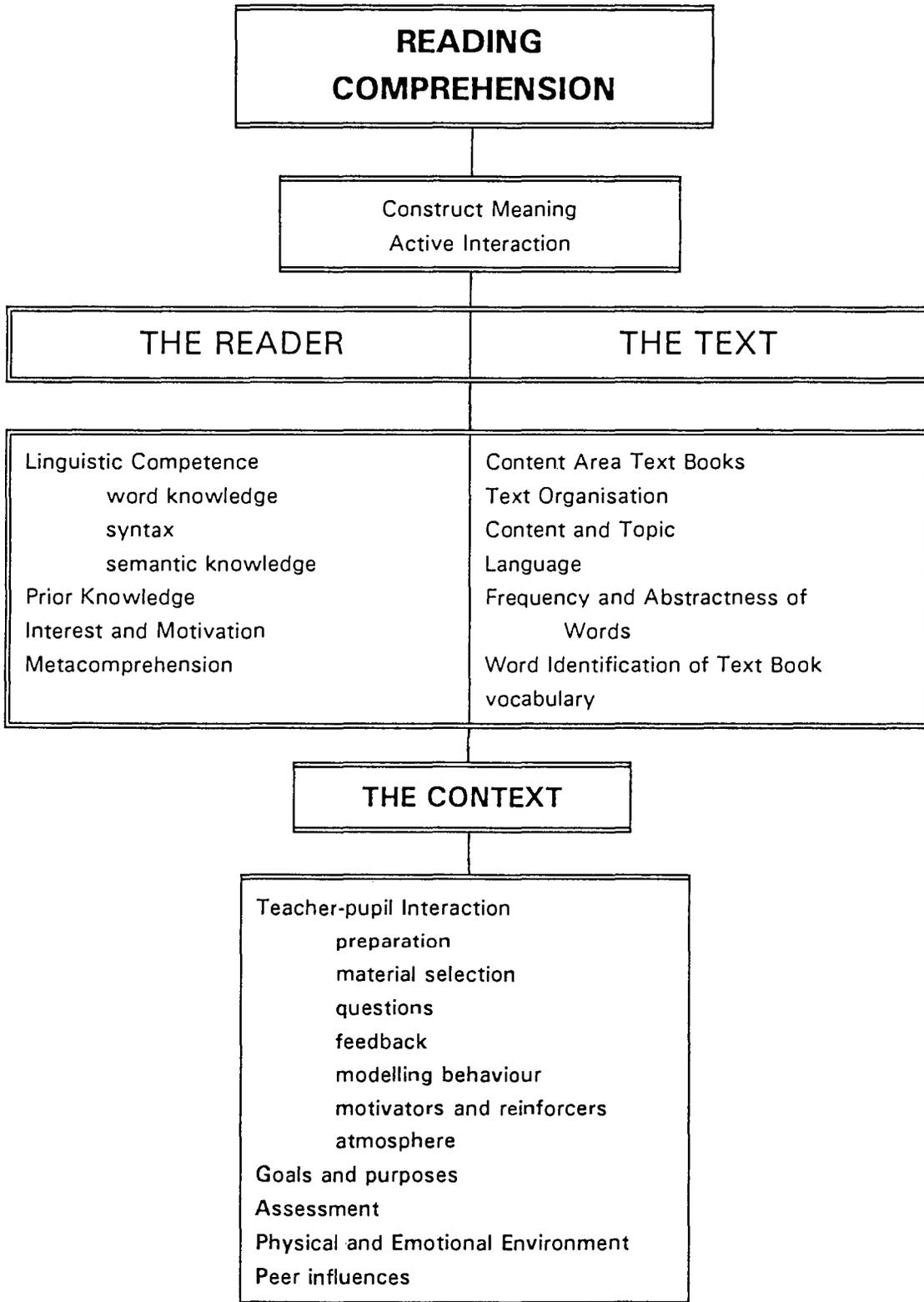


Figure 8

There are several levels of comprehension and the implication is that each level of understanding requires more advanced cognitive functioning.

2.3.4 Types of reading comprehension

The most basic level is literal comprehension, followed by interpretive comprehension with critical comprehension being on the highest level (Lerner 1981:312,313).

2.3.4.1 *Literal comprehension*

In literal comprehension, interpretation of the text meaning is made between the spoken and printed language on a surface level only. This involves the understanding of ideas and information as it is explicitly stated in the text, hence Lerner's (1981:312) appellation "reading *the* lines". The wh-questions (who, where, what, when) facilitate a literal interpretation. In order for literal comprehension to take place successfully, readers need to have a knowledge of word meanings. They should be able to recall details directly stated or paraphrased and understand grammatical clues, for example, subject, verb, pronouns, conjunctions. Readers need to be able to recall the main idea explicitly stated, to recall events sequentially, follow directions and be able to skim in order to find particular information presented in the passage (Heilman et al. 1986:190; Wallace and McLoughlin, 1988:135).

2.3.4.2 *Interpretive comprehension*

This involves the understanding of ideas and information not explicitly stated in the passage. Meaning must be obtained at a

deeper level and the emphasis is now more on 'why' questions. For Lerner (1981:312) this is reading *between* the lines because of the need to go beyond the print to find the meaning. By focussing on the semantic and syntactic characteristics of the text, the reader can generate alternative meanings which may or may not be in congruence with the author's intended meaning.

Higher cognitive involvement is therefore implied and this is evident in the type of skills necessary for interpretive comprehension. Readers must be able to *reason* with presented information in order to understand the author's tone, purpose and attitude. They must also be able to *infer* factual information, main ideas, comparisons, cause-effect relationships not explicitly stated in the text. Other important skills required for interpretive comprehension are the ability to *predict* outcomes, *form opinions* (implying creative thinking) and *summarise* story content (Sutaria 1985:233,234; Heilman et al. 1986:190).

2.3.4.3 *Critical comprehension*

This level which is believed to be the highest level of concept formation is referred to by Lerner (1981:313), as reading *beyond* the lines. In order to critically comprehend, readers must be able to analyse, evaluate and personally react to information presented in a passage in order to reach optional conclusions. Readers must be able to make generalisations and hypotheses by using bias. They must be able to judge relevance and consistency, reliability, validity and make value judgements regarding accuracy. Facts and opinions must be judged and discriminated, as well as subjectivity (non-verifiable) and objectivity (verifiable). Critical comprehension also requires the ability to make comparisons, analyses and evaluations

(Sutaria 1985:285; Heilman et al. 1986:190).

Metacognitive skills (cf. 2.2.2.1 (c)), required for reading critically include the ability to clarify text demands, to attend to the most important content, to test new information against background knowledge, to test for consistency across paragraphs, to monitor comprehension, to make and evaluate inferences and to extend and refine what has been learnt (Reid 1991:362). Literal and interpretive comprehension plays a vital role in the development of critical comprehension therefore deficits in these spheres will have a rippling effect. (cf. 3.5.1.3 (c). Figure 9 provides a graphic organisation of the types of reading comprehension.

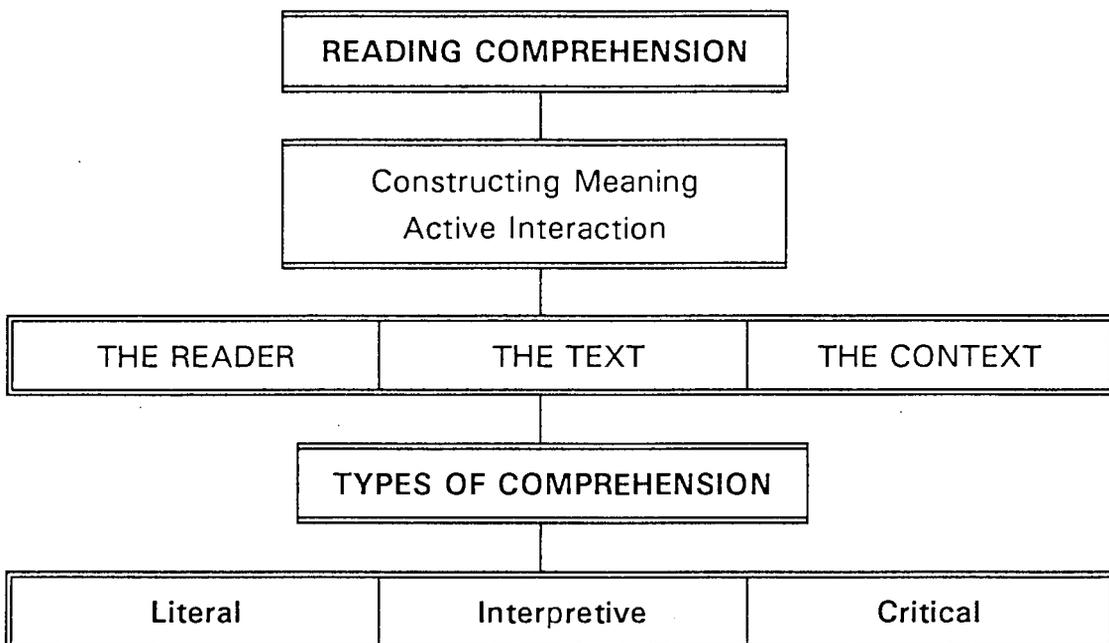


Figure 9

The purpose of reading is to glean information from the printed page, be it for information or pleasure.

2.3.5 Goals of reading comprehension

Reading for information includes the academic demands made at primary, secondary or tertiary level. One needs to keep up to date with what is going on in the world so newspapers, magazines and books fulfil an important role. Most occupations require an ability to read and societal demands place a heavy emphasis on literacy to succeed in one's occupation. Reading is also necessary for the pursuit of interests and hobbies.

The purpose for reading will influence how a particular text is read. In order to answer multiple choice questions reading for detail is required. The details however will not be so significant if one only needs a general picture (Cooper 1986:15). One goal for meaning to result from reading is for readers to be able to *apply the information they read in various situations*. The reader must construct a full and coherent account of the textual meaning which must be stored in memory to be practically implemented in new situations as the needs arise.

Another goal involves the ability to *integrate new knowledge with prior knowledge*. Readers need to assimilate new information with prior knowledge so that experiences become incorporated and as such augment each other. Interpretations of prior knowledge will also be affected by new information and the reader will have to make the necessary accommodations (Spiro and Myers 1984:489).

Reading for pleasure or recreational reading has as its aim the

reading of material which offers enjoyment, delight and amusement. A wide variety of books is read and frequent use is made of the library. Any spare moment is used for the sake of enjoying reading (Bonds and Sida 1993:7,8).

From the following diagram it is evident that for information to be understood, evaluated and used, there must be an interaction between the author and the reader.

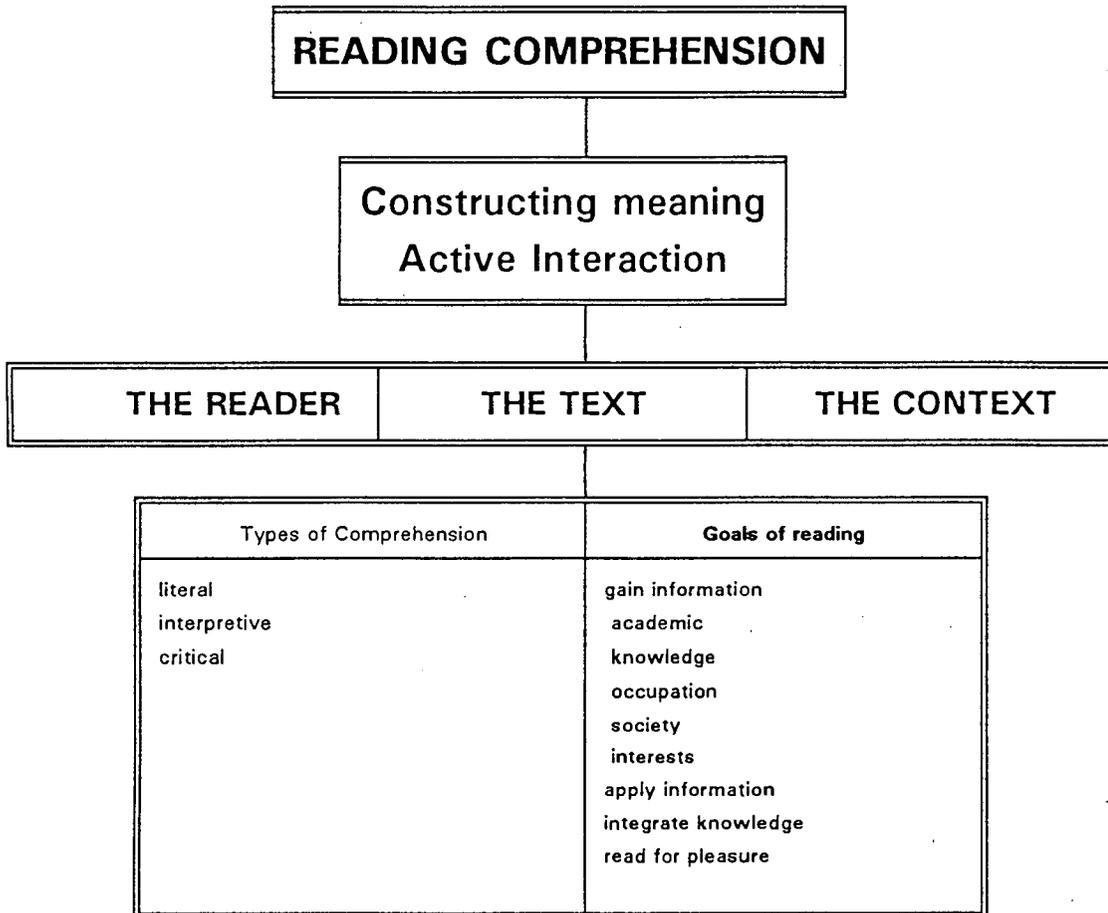


Figure 10

To read with meaning several requirements need to be met.

2.3.6 Requirements for successful reading comprehension

In order to successfully cope with the reading requirements of the secondary school situation where the emphasis is on reading to learn, pupils must have *metacognition* (cf. 2.2.2.1 (c)). They need to understand and remember the demands of each task. They need to identify and pay selective attention to the significant information in order to remember it. Relevant strategies that will facilitate memory, monitor comprehension and remediate difficulties where necessary must be practically implemented (Baker and Brown 1984:22). Specifically then, in order to successfully comprehend, Baker and Brown (1984:28) postulate that readers should:

- confirm the purposes for reading
- adjust the rate of reading the choice of strategies according to the purpose of reading
- recognise the main ideas of the extract
- utilise the innate logical structure of the text
- interpret new information using prior knowledge
- be sensitive to contextual restraints
- evaluate the text for clarity and completeness
- regulate comprehension failure
- choose applicable criteria to evaluate one's comprehension level.

Moore, Reith and Ebeling (1993:7) refer to the assertion by Resnick (1987) that successful reading results when readers integrate two types of reading comprehension strategies:

"...the ability to understand written texts automatically and with little effort, and the capacity to apply deliberate strategies for interpreting and remembering when the need arises".

For Dehn (1984:87), successful reading comprehension is dependent on the ability to make *inferences* of the information which is textually implicit. Not all the information intended by the author is explicitly stated in the text so in order to fill the gaps in the information and create an internal conceptual representation of the story and correlate the passage being read with one's prior concepts and cognitive structures, inferences must be made. Dechant (1991:429), nominates the following as examples of inferences. There are convergent (textually implicit) and divergent inferences (scriptally implicit or schema-implicit), the prediction of outcomes, drawing conclusions, inferring cause and effect relationships and inferring referents for anaphora.

To facilitate making inferences, readers must be able to make *expectations* of meaning from the text. When readers are halfway through a story and have as yet expectations which are inadequate or incongruous, comprehending the remainder of the story will not be easy (Dehn 1984:92,93). Another facilitator for making inferences is having *prior domain knowledge* (cf 2.3.3.1 (b)). For Dehn (1984:92),

"...'domain' knowledge for general reading such as stories is quite substantial, encompassing common-sense knowledge of physical causality, human intentionality, and societal norms. Lack of such knowledge makes a story as incomprehensible as a technical paper is to a nonspecialist".

Inferences need to be controlled in order to prevent one going off the subject and entertaining meanings not intended by the author. The reader's *beliefs* have a strong influence on the control of inferences as inferences made on the strength of one's beliefs could be misinterpreted by readers with differing beliefs (Dehn 1984:93,94). *Prior memory organisation* of one's beliefs and one's knowledge determines that to which attention is paid and therefore affects understanding and the memory of what has been read (Dehn 1984:96). Besides beliefs and memory organisation, Dehn (1984:94) postulates that *variable depth processing* facilitates the control of inferences and is fundamental to reading comprehension. The purposes for reading determine how the text will be read and how much attention is thus necessary. Deeper processing allows readers to concentrate all the attention to that which is significant for the particular purpose or pay less or no attention to that which is irrelevant. *Variable depth processing* is therefore largely dependent on the purposes for reading for the selection of the processes to read for detail, skim or scan to name a few.

From the above information, the following diagram has been constructed to emphasise the requirements for successful reading comprehension.

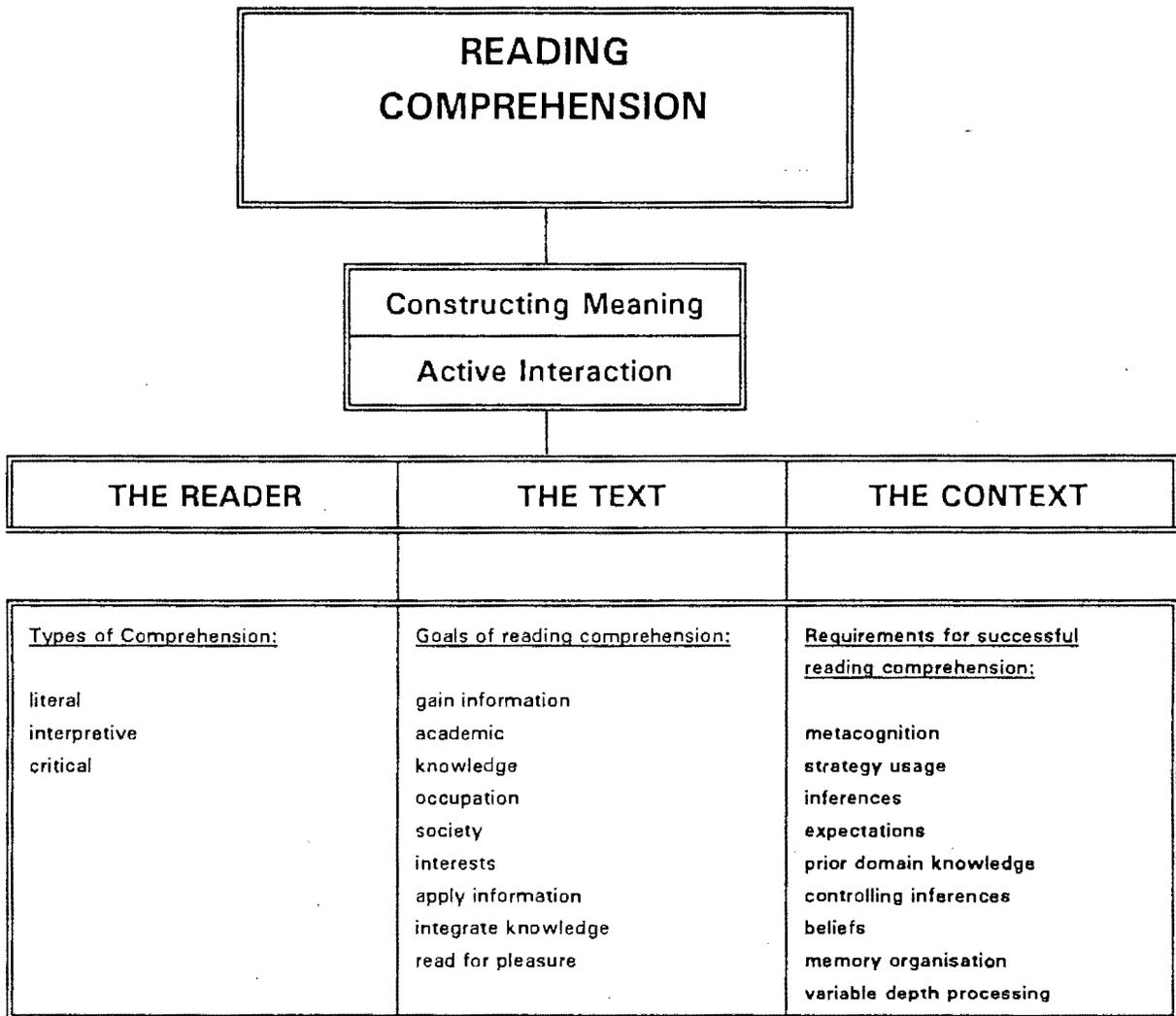


Figure 11

2.4 CONCLUSION

It is evident that reading is a complex process and in order to successfully comprehend there are several criteria that need to be met as indicated in this chapter.

In order to highlight the significance of all the aspects concerned with reading comprehension, they have been recorded separately giving the impression that they are isolated, but in fact, the opposite is true. There is a strong interrelationship of all these aspects and proficiency in each stage is necessary before progressing to the next. Therefore any problems experienced in any one stage will affect proficiency in the next. Reading comprises word recognition and comprehension. In order to recognise words the child must know his sight words and be able to decode. Automaticity in word recognition will facilitate accuracy and fluency, leaving the reader free to pay attention to read for meaning.

Adequate functioning of one's cognitive processes is a prerequisite for successful reading comprehension. The cognitive processes include the intellect, thinking, attention, perception, memory, language and metacognition. Another significant factor is the way in which information is processed. The reader must be able to construct meaning and actively interact with the text and the context by using prior knowledge, and one's metacomprehension. Readers need to be motivated and show an interest. Readers need to be able to use all types of comprehension (literal, interpretive, and critical). In order for reading to be purposeful it must be goal directed. The purpose for which a reader reads affects how the reading will be done (reading to write a test will require attention to specific details whereas reading for pleasure does not). This automatically leads to the requirements for successful reading comprehension which includes knowledge of one's own metacognitive functioning, the ability to use strategies, make and control inferences using expectations, prior domain knowledge, beliefs, memory organisation and variable depth processing.

In so far as the text is concerned, careful attention must be paid to the nature of the text, text organisation, content and topic, language, vocabulary and word identification skills when using content area text books.

The context in which the reading takes place must be conducive to learning. If one considers the opinion of Lamb and Arnold (1988:330), who say that:

"In the final analysis, it is the classroom teacher who most strongly influences the conditions that determine each child's success or failure in learning to comprehend."

Then factors such as teacher-pupil interaction, goals and purposes set for classroom reading, assessment of reading and the physical and emotional environment have a vital role to play for pupils to read to learn successfully.

The following concise diagram has been constructed from the abovementioned information to illustrate how the significant components of the reader, the text and the context, actively interact to construct meaning resulting in successful reading comprehension.

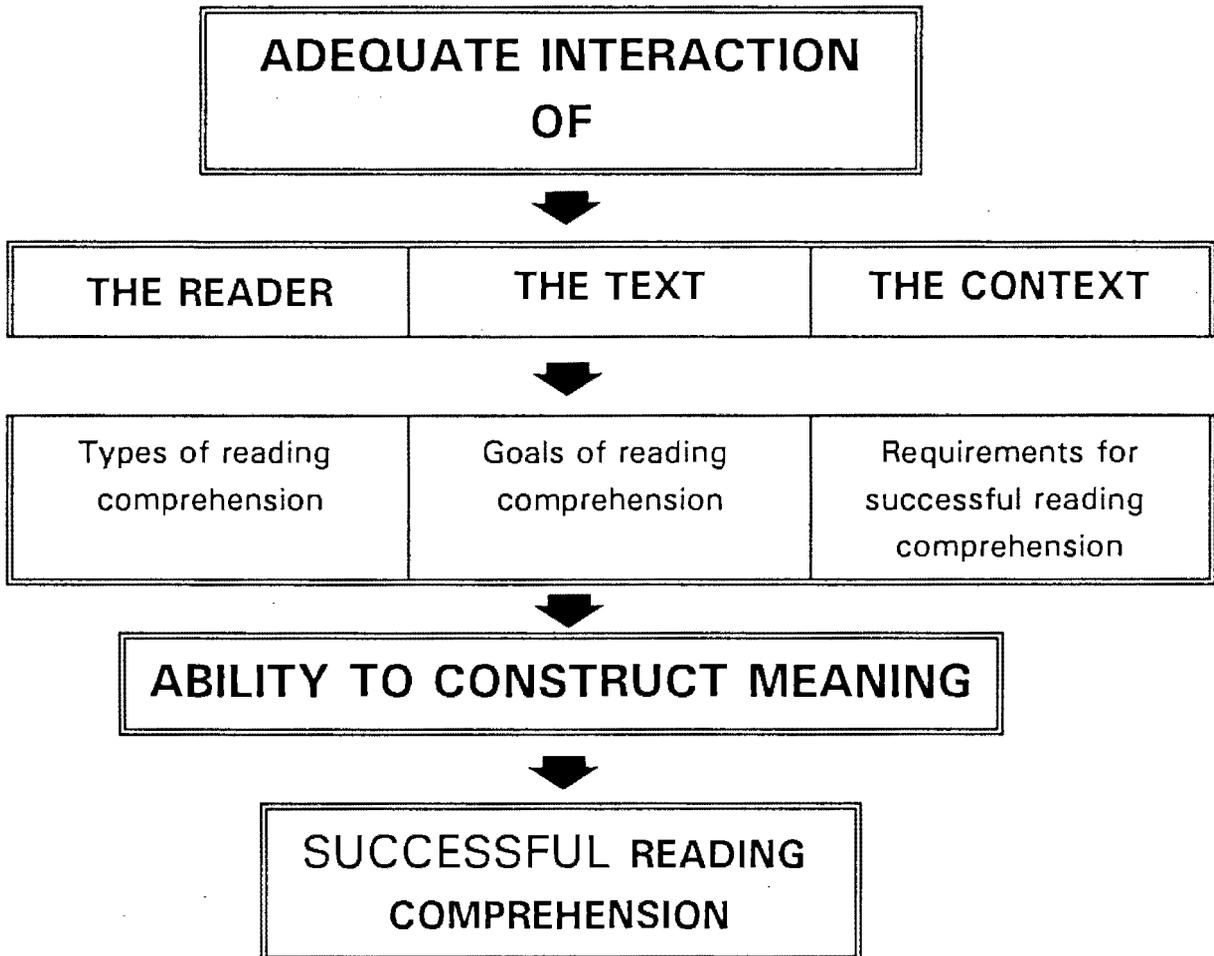


Figure 12

The role of the reader is a very significant one. In this dissertation the concern is with readers who are learning disabled with reading comprehension deficits, in the secondary school. The characteristics of these pupils will be described in the next chapter.

CHAPTER THREE

THE SECONDARY SCHOOL LEARNING DISABLED PUPIL WITH A READING COMPREHENSION DEFICIT.

3.1 INTRODUCTION

Learning disabled pupils can be found in all schools. Some pupils are in mainstream schools and receive remedial assistance either within the school or privately. Some pupils can be found in Remedial Units attached to mainstream schools or if they are in the Junior Primary, in Aid Classes. Some pupils have been enrolled in schools for Specialised Education, but many have been undiagnosed or, having been assessed, are on Waiting Lists at the nearest school for Specialised Education. Some are in tertiary institutions having been perhaps successfully remediated or are able to compensate sufficiently in order to cope with the academic demands of a tertiary institution. Some learning disabled people are out in the workplace or without work, continuing their lives, having perhaps never been identified. The implication of this being that, not having been identified, they were never assisted in being taught compensatory skills or actualising their true potential. They are therefore probably doing work far inferior to what they could have done, as they have taken jobs which avoid their problem areas thus eliminating many possibilities they might have had. At this juncture, it is apt to ask what are learning disabilities?

3.2 LEARNING DISABILITIES

Learning disabled pupils are distinguished by several characteristics, all of which are not always manifested in every child in the same way thus making for a heterogeneous group. Learning disabilities do not affect all spheres of performance, uniqueness is evident in that each child has their own strengths and weaknesses. It is precisely this dissimilarity or heterogeneity that makes definitions of learning disability so difficult. Heterogeneity also extends to reading, as children who have difficulties with reading do so for many different reasons and there is an abundance of differences between good and poor readers (Singer 1982:46,53). An issue still confronting the field of learning disabilities is that of identifying those characteristics that differentiate the pupil with learning disabilities from other problem learners. These pupils are not succeeding at school and yet they do not concur with the prevailing classifications of exceptionality. As a comprehensive diversity of behaviours requiring a multidisciplinary approach is evident, very little consensus regarding the terminology of learning disabilities emerges and the definitional complications evident from the outset continue, revealing a highly heterogeneous group of children where no two are alike or are likely to share precisely the same assessment and teaching needs.

However, Reid and Hresko (1981:21) postulate a number of similarities which are included in all definitions and these incorporate the academic deficits, uneven performance, physiological correlates and the preclusion from other categories of exceptionality, although definitions for the last three criteria still remain disputable. De Ruiter and Wansart (1982:23) state that one aspect which proves to be unifying is the severe deficits learning disabled persons experience with information processing. The information processing approach

which emphasises the significance of the individual's processing activities fundamental to different cognitive activities has been documented (cf. 2.2.3).

The definition of learning disabilities most widely accepted (cf. 1.2.1) is the one revised in 1988 by the National Joint Committee for Learning Disabilities (N.J.C.L.D.).

3.2.1 A definition of learning disabilities

"Learning Disabilities is a generic term that refers to a heterogeneous group of disorders manifested by significant difficulties in the acquisition and the use of listening, speaking, reading, writing, reasoning or mathematical disabilities. These disorders are intrinsic to the individual and presumed to be due to central nervous system dysfunction, and may occur across the life span. Problems in self-regulatory behaviours, social perception and social interaction may occur concomitantly with other disabilities but do not themselves constitute a learning disability. Although a learning disability may occur concomitantly with other handicapping conditions, for example sensory impairment, mental retardation, social and emotional disturbance or intrinsic influences such as cultural differences, insufficient or inappropriate instruction, they are not the result of those conditions or influences" (Hammill, Leigh, McNutt and Larsen 1987:109; Hammill 1990:77).

Many a question is asked concerning the etiology of learning disabilities and together with the heterogeneity of learning disabilities has also resulted in various perspectives for explanations in order to elicit appropriate and effective responses for example, neuropsychological, developmental, cognitive, linguistic learning and ecological (Wallace and McLoughlin 1988:22). A brief look at the etiology of learning disabilities is necessary in order to elucidate how

the learning of the learning disabled differs from the common concept of learning.

3.2.2 The etiology of learning disabilities

According to Lynch and Lewis (1988:363) the "study of the causes of learning disabilities has a long rich history". Probably the reasons for this have been the difficulties which have been experienced in formulating the causes of learning disability. Firstly, many different disciplines are involved with the field of learning disabilities; medical, educational, therapists and parents to name a few, and each has their own point of departure. Secondly, categorical confirmation of the causes and contributing factors is difficult (Derbyshire 1991:383). However, the question of causation is important as although it cannot change the educational program, the knowledge of the causes can have an influence on the remediation of learning disabilities (Kirk and Gallagher 1989:193).

In the definition of learning disabilities (cf. 3.2.1), reference is made to the intrinsic nature of the disability with the presumption of a dysfunction in the central nervous system. According to Swanson and Bray (1991:86),

"Their typical natural history, or lifelong course from infancy to adulthood, reflects a continuous dynamic interaction between a developing organ (the brain) with certain biological tendencies and a changeable, psychosocial environment."

All behaviour is mediated by the brain and the central nervous system so this results in observable behaviour as is evident in the characteristics of the learning disabled. There are early manifestations in the pre-school years and in order to prevent failure

in the longterm, high risk children need to be identified early, before their severe developmental learning disabilities have a negative influence academically (Kirk and Gallagher 1989:238). Possible explanations which have been put forward to explain the causes of the central nervous system dysfunction are: medical, including pre, peri and postnatal causes; genetic, where the role of heredity is explained and biochemical imbalances (Lynch and Lewis 1988:363,364; Kirk and Gallagher 1989:196,236; Swanson and Bray 1991:86). Something which is of paramount importance and which must be constantly borne in mind is the *interrelatedness* of each of the facets included in learning disabilities.

The above information is presented graphically as follows.

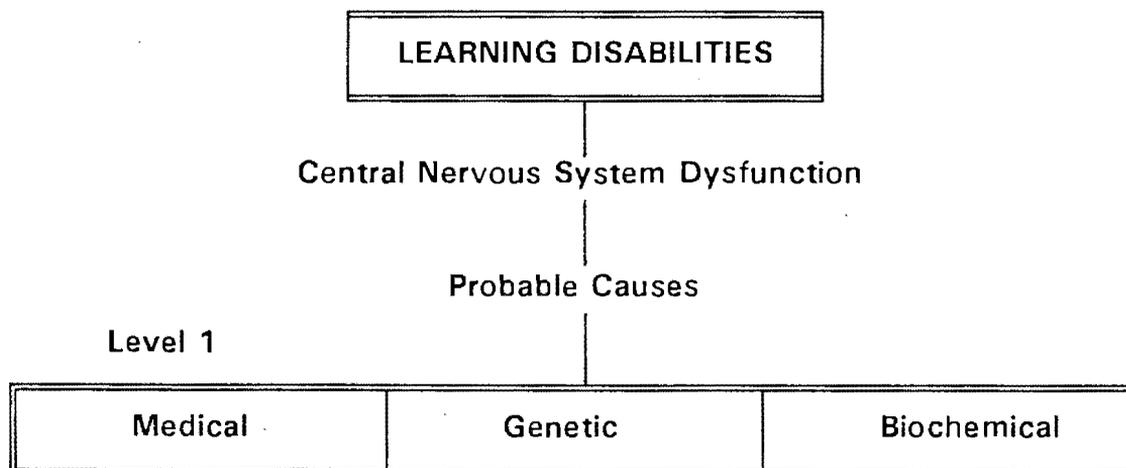


Figure 13

In line with the orthopedagogical point of departure, problems experienced by children have been classified as development, learning and behaviour problems. Development problems are evident when there is a delay in the child's development as a whole or specific facets thereof. Learning problems are evidence of academic retardation in formal and informal situations. When a child's behaviour is persistently and severely at variance with the norm,

behaviour problems are identified (Du Toit 1991:26).

According to Kirk and Gallagher (1989:187), developmental learning disabilities include attention disorders, memory disorders, perceptual and perceptual-motor disorders as well as thinking and language disorders. Learning or academic learning disabilities are disabilities in spelling and written expression, handwriting, maths and reading. These are intrinsic to the child. Such factors as, physical conditions, environmental, and psychological conditions, aggravate academic learning disabilities but as they are extrinsic and of such a nature that as a rule, they can be rectified (Kirk and Gallagher 1989:236). The above information is represented graphically as follows.

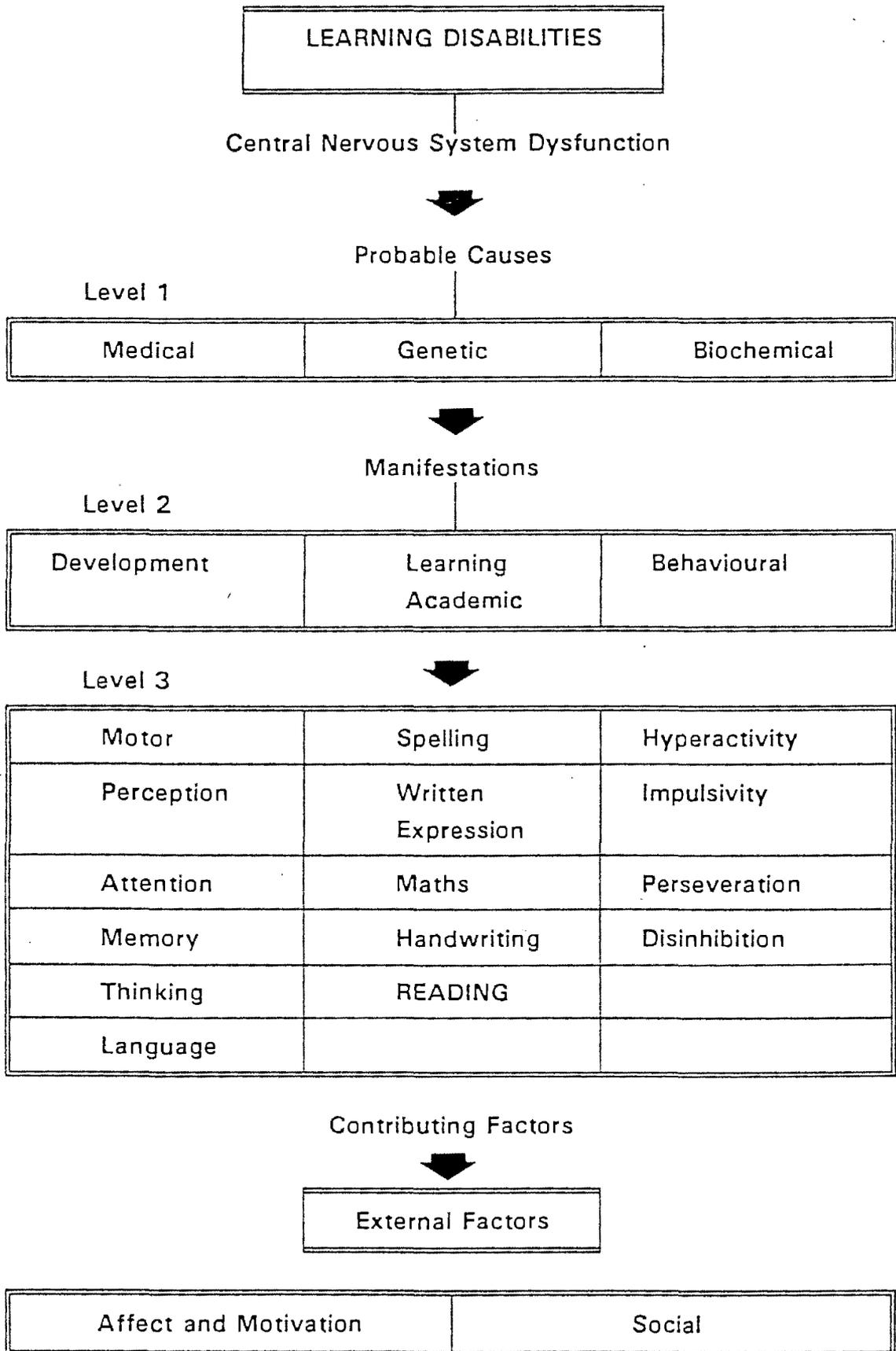


Figure 14

(Adapted from Kirk and Gallagher 1989:236).

Learning cannot take place without the involvement of the nervous system (Cruickshank 1983:28). From the previous diagram, the neurological base and the effects thereof on the academic learning of the learning disabled are evident. Level one records the possible origins of the learning disability. On level two the effects on development, learning and behaviour are evident. On level three the external manifestations are recorded.

A closer look at the typical and observable manifestations of the learning disabled secondary school pupil follows. The secondary school pupil must first and foremost be viewed as an adolescent having to deal with puberty, independence and peer group pressures and then as an exceptional learner (Mercer 1987:45).

3.3 THE TYPICAL MANIFESTATIONS OF THE LEARNING DISABLED SECONDARY SCHOOL PUPIL

3.3.1 Introduction

In her study of the manifestations of learning disabilities which continue into adolescence, Whyte (1984:24) hypothesised that "learning disabilities do not disappear during adolescence". She not only confirmed her hypothesis but also found that the learning disabilities remained as serious problems pervading academic achievement, vocational guidance and social and emotional adaptation. The adolescent learning disabled pupil will be briefly described.

3.3.2 The adolescent learning disabled pupil

The period of adolescence is a difficult one for anyone, but for the adolescent who is learning disabled, it is even more so. They have

to endure the effects of the combination of learning disabilities, academic deficits and adolescent characteristics (Lerner 1993:278). The subtle nature of some pupils learning difficulties, the lack of remedial assistance in the primary school and the curriculum demands of the secondary school, sees the manifestation of their problems for the first time. For others, the results of continuous failure, insufficient motivation, social difficulties and behavioural problems are evident. Adolescence is also the time when the social and behavioural difficulties can become the primary problem and the academic deficits, secondary (Lerner 1993:279). Academically, Schumaker, Deshler, Alley and Warner (1983:47,48), found that during the secondary school years, learning disabled adolescents reached a plateau in so far as basic skills was concerned and were deficient in study skills, the implementation of strategies and their executive functioning was immature. Deficiencies were also found in their social skills. Apart from the fact that the adolescent's find the demands made upon them in the secondary school problematic, their needs are also erratic. On the one hand, adolescents yearn for freedom and independence but they are still dependent on their parents and need the security provided by their families. Hence the struggle for freedom and independence as opposed to security and dependence. In so far as physical changes and developing sexuality is concerned, secondary school pupils are continually having to mentally accommodate their rapidly developing physiques including physiological and sexual changes pertinent to adolescence. Adolescents are very self-conscious of these changes and with the way they look and compare to the norms of the peer group. Self-consciousness can prompt withdrawal and inferiority feelings. The influence of peer pressures cannot be underestimated especially when they are not in line with family norms (Lerner 1993:274,275).

According to Lerner (1993:276,277) there are special characteristics of adolescents with learning disabilities. These include passive learning, a poor self-concept, inept social skills, attention deficits and a lack of motivation. As these characteristics feature prominently in pupils with reading comprehension difficulties, they will be more fully explained in the outline of the important manifestations concerning the learning disabled adolescent with a reading comprehension deficit.

3.3.3 Manifestations

Although the manifestations are described separately, it must be remembered that they are interrelated, dependent upon each other and cannot be isolated, therefore the influence on the adolescent's successful reading comprehension cannot be underestimated.

The following manifestations are distinguished.

3.3.3.1 *Motor manifestations*

Deficits in motor abilities which can be categorised as gross (large body movements), fine (small body movements) and sensory will be briefly described. According to Sileo (1989:230), an improvement in gross motor abilities is generally evident in learning disabled secondary school pupils. However, Whyte (1984:16) and Houck (1984:27) testify to research findings where poor co-ordination, general motor clumsiness and fine and gross motor deficiencies prevail in adolescents who are learning disabled. Attention is drawn by Mercer (1987:131), to the fact that motor deficits no longer receive as much attention as they did in the past. Willows and Corcos (s.a.:26) feel that visual aspects have been overlooked. Visual conditions such as nystagmus, which is a

condition in which there are rapid involuntary movements of the eyes and often a sign of brain malfunctioning (Hallahan and Kauffman 1985:308) and strabismus, a condition in which the eye (eyes) is (are) directed inward or outward (Hallahan and Kauffman 1985:307,308) are often associated with learning disabilities. Some research studies have indicated that binocular vision such as strabismus has more implication for reading than refractive errors (Lerner 1993:238). Learning and reading are probably more dependent on the processes of visual discrimination and visual perception (Lerner 1993:238).

As a result of the neurologically based cause of learning disabilities (cf. 3.2.2), attention deficits have been viewed as a defining characteristic of learning disabilities (Reid, Hresko and Swanson 1991:30).

3.3.3.2 *Attention*

As one of the executive functions of the information-processing theory as discussed in the previous chapter (cf. 2.2.2.3 (a)), attention is essential for any learning to occur. Deficits in attention and concentration therefore can severely hamper ones' learning as information that has not been attended to cannot be processed any further. Learning disabled pupils may not pay close attention to the task at hand or they may address their attention incorrectly to the insignificant aspects of the particular situation or task (Hallahan and Reeve 1980:156). In the secondary school situation pupils are expected to listen and study for longer periods and this requires extended attention and concentration (Lerner 1993:277). Attention disorders are at times allied to other learning disabled characteristics, for example: hyperactivity, distractibility, and impulsivity (Lynch and Lewis 1988:371), (cf. 3.3.4.4).

As perception is the first step in obtaining and processing information according to Kirk and Gallagher (1989:189), it will be addressed briefly.

3.3.3.3 *Perception*

Perceptual deficits are evident in the inability to discriminate the distinctive features within a specific sensory system; co-ordinate stimuli from two or more sensory channels and recognise sequence in temporal and spatial stimuli (De Ruiter and Wansart 1982:38-40). Previously, researchers such as Strauss, Werner and Lehtinens focussed on basic perceptual tasks and learning disabilities were viewed as deficiencies affecting the way an individual interpreted or represented information. Reid et al. (1991:17) refer to the changed view where the work of Kavale and Forness (1986), indicate that only an extremely small percentage of all learning disabled individuals may have impaired abilities to process the physical attributes of information. They also mentioned the work done by Spear and Sternberg (1987), which indicates that deficits of disabled readers are verbal rather than nonverbal and cognitive rather than perceptual in nature. As the learning disabled pupil with a reading and comprehension problem is addressed in this dissertation, the views of Spear and Sternberg (1987) (Reid et al. 1991:17), are valued and the perceptual aspects will only be addressed in the light of the sensory register of the information processing theory (cf. 3.4.4.3).

That memory is implicated in the sum total of all that one does, is the opinion of Whyte (1984:23). She continues by stating categorically that:

"If there is any one skill which separates the exceptional child from the achieving child, it is memory."

3.3.3.4 *Memory*

Memory disorders are evident when what has been perceived visually, auditorially or experienced, is not remembered or placed in the long-term memory where capacity and persistence is fundamentally unlimited (Smith 1982:51). For information to be stored in long-term memory, one needs to attend to the information competently and selectively (cf. 2.2.2.1 (b)(i)). Learning disabled pupils often experience deficits in attending competently and selectively in order to assimilate stimuli details for the formation of adequate mental images. The retrieval of information from long-term memory (cf. 2.2.2.1 (b) (iv)), is dependent on organisation. A lack of insight into the methods of working in their own memory systems is sometimes evident and less information than is required for the particular task, is recalled (Torgesen and Licht 1983:7). Learning disabled pupils are also less likely to employ memory strategies such as, verbal rehearsal, imagery, and elaboration which have proved to facilitate memory performance as strategies to actively organise their memories (Torgesen and Wong 1986:100). Deficits in metamemory (cf. 2.2.2.2 (iv)) occur according to Sutaria (1985:13), and Mercer (1987:227) when strategies are not used to organise, store and retrieve information.

As memory also facilitates thinking and some learning disabled pupils have difficulties with thinking, it is necessary to focus on this aspect.

3.3.3.5 *Thinking*

Processing information is a complex function requiring that all information must be selected, reflected upon, judged, analysed, synthesised, organised, compared, relationships determined, problems solved and then critically evaluated (cf. 2.2.2.1 (iii)). Decision making affects the executive functioning of information processing. According to Reid et al. (1991:252), the cognitive processes of people making decisions are not coherently integrated. In thinking, they may make use of isolated processes within or between cognitive planes. In the case of the learning disabled pupil, the processes within and between the cognitive planes are more poorly co-ordinated than in the non-disabled pupils. A cognitive style is the way one thinks and Kirk and Gallagher (1989:190), include cognitive style as a disorder of thinking. One's style can be reflective or impulsive. In a reflective style reactions are regulated and careful whereas in an impulsive style reactions are fast and unconstrained.

Language is involved when thoughts are put into words, therefore language has a decisive role to play in reading performance.

3.3.3.6 *Language*

For Whyte (1984:16), learning disabled adolescents with a language deficiency, experience mostly vocabulary, grammar and spelling deficits. Apart from the limited vocabulary, the adolescent's ability to use language as a medium for the higher functions of abstract conceptualisation and thinking is inadequate. According to Wiig & Semel (1976:6,7), adolescents with language deficits experience difficulties with semantics, critical for academic success. As such it is necessary to take a look at the specific

academic problems experienced by the learning disabled.

3.3.4 Academic manifestations

Learning disabilities do not manifest in all areas of academic achievement but they do influence the tempo and facility of learning. Despite average intelligence, learning may be slow or difficult needing intense application on the part of the pupil (Lynch and Lewis 1988:366). In secondary schools there are learning disabled pupils who have not yet mastered the basic skills, to efficiently cope with the heavy demands of the secondary situation. This is especially the case in the content subjects, all of which require reading mostly way beyond their level. They also continue to experience difficulty with tasks requiring specific types of information processing.

Learning disabled pupils are often poor achievers and Shepard, Smith and Vojir (1983:328), maintain that the achievement gap between learning disabled pupils and their non-disabled peers increases as they get older. The research of Schumaker, Deshler, Alley and Warner (1983:45), revealed that most learning disabled pupils displayed severe academic achievement deficits and typically scored below the tenth percentile on achievement measures in reading, written language or maths. The severity of underachievement is very noticeable at secondary level with a comprehensive underachievement in all basic skill subjects as opposed to singular skill deficits. An additional finding of Schumaker et al (1983:47,48) was that learning disabled adolescents manifested deficits in study skills and strategies. Particular difficulties were noted in note-taking, completing homework, test preparation, listening and monitoring skills. Allied to this was their finding that many learning disabled adolescents

revealed immature executive functioning, which is the ability to initiate and implement a strategy to solve problems.

When pupils lack the basic skills it can be expected that they will fail to meet the standard academic requirements. Due to constant failure and underachievement, the learning disabled often lack motivation. Academic performance will in turn also be affected by motivational and affective factors.

3.3.4.1 Motivational and affective factors

Motivation activates behaviour and can be intrinsic (an inner drive to attain one's goals) or extrinsic (an external drive for others' approval or gain). Intrinsic motivation is important as it in itself endorses learning and as it is not reliant on external factors, allows the learner to be independent. It also enhances performance (Van den Aardweg & Van den Aardweg 1988:138,9). Learning disabled pupils often lack intrinsic motivation and motivation problems are often as a result of having to learn meaningless material which results in learning which is nowhere near the pupils' potential (Adelman and Taylor 1983:384). As he believes that meaning is a true motivator, Wiens (1983:146), is of the opinion that if meaning permeated the learning disabled adolescent's school activities, their true capabilities would be evident. He continues by saying that the learning disabled adolescent's inability to structure and organise their thoughts is considerably influenced by motivation and self concept.

3.3.4.2 Self concept and self esteem

Repeated failure seriously affects the learning disabled pupils' self concept and self esteem. Larson and Gerber (1992:136) cite

Brown's belief that "self-concept for learning is another critical factor influencing metacognitive development". Weber (1974:4) attests to the debilitating path from "I can't" to "I don't" or "I won't" experienced by the learning disabled pupils as a direct result of failure breeding resistance for trying. Learning disabled pupils attribute their failure to lack of ability, not lack of effort. Research by Pearl, Bryan & Donahue (1980:8) confirmed that when learning disabled pupils experience failure, they are less likely than non learning disabled pupils to attribute it to a lack of effort, thus making light of the value of effort. As they believe that ability is the cause of success and having experienced so much failure, question the value of putting any effort into what they have to do. This perception of incapability also has a detrimental affect on self concept as they lack confidence and motivation to make things happen for themselves. Learning disabled pupils, according to Lerner (1988:251) have a low confidence level as a result of continuous failures. The learning disabled often have serious misgivings about their intellectual abilities and judge any endeavours at accomplishment as a waste of time. Perseverance is very limited.

3.3.4.3 *Learned helplessness*

Learned helplessness is a term used by Seligman (1975:37) to describe the lack of perseverance to accomplish assignments well within the capability of the learner. This learned helplessness is largely as a result of the frequent failures these learning disabled secondary school pupils have experienced and therefore any tasks are not worth the effort. What is preferable is that they remain passive until the teacher gives assistance or direct instruction. Thus the child does not actively involve himself/herself in the learning situation. Borkowski, Carr, Rellinger and Pressley

(1990:69) state:

"Learned helpless children do not seem to possess the underlying motivational states, attributional beliefs, and metacognitive processes that support specific strategy knowledge, particularly in the face of failure. Learned helpless children do not believe they will succeed through effort. As a result, these children are unlikely to develop or use higher-order executive processes."

Egocentrism is a characteristic of secondary school pupils and their values are based on the principles as dictated by peer pressure. Parents are viewed as being critical resulting in frequent conflict (Sileo 1989:229).

At secondary school level, peer approval and acceptance is of vital importance so being perceived as incompetent will also have a detrimental affect on their self concept. Learning disabled pupils are aware of their difference between potential and actual achievement and that their performance academically and socially is not conducive to teacher or peer expectations (Reid 1988:80).

A poor self concept, lack of confidence and learned helplessness can have a detrimental influence on the behaviour and conduct of a child.

3.3.4.4 *Behavioural manifestations*

In their description of the behavioural characteristics of the learning disabled, Bos and Vaughn (1991:3), include aggression, withdrawn and bizarre behaviour. Aggression can be physical and verbal. The learning disabled may be inclined to be easily upset, resulting in their lashing out physically or verbally.

The following behaviour manifestations can be found in learning disabled adolescents. Withdrawn behaviour is evident in the tendency of some learning disabled pupils to be loners and lacking in interaction with others. Unusual behaviour patterns fall into the category of bizarre behaviour. There are two types of *hyperactivity*: motor and sensory hyperkinesis. Motor hyperkinesis may continue into the secondary school years but manifests itself differently, for example in foot tapping, finger tapping and even grimacing (Sileo 1989:230).

Impulsive individuals act hastily. Their thoughts and activities show a lack of premeditation or reflection (Sutaria 1985:121). This can result in their being more in trouble than their peers (Booyse 1987:178). *Perseveration* is evident when excessive attention is paid to inapplicable task demands (Sutaria 1985:121). Perseveration is more generally evident in the adolescent's behaviour and can be affiliated to hyperactivity and impulsivity. There is a tendency to be silly and boisterous and they do not know when to stop. This type of behaviour can be disturbing to others (Booyse 1987:189). The learning disabled's insensitivity to the feelings of others coupled with egocentricity, often results in disinhibition. *Disinhibition*, takes place when concentration is prevented by other interfering thoughts and actions (Sutaria 1985:121).

On the grounds of research findings that learning disabled adolescents were less involved in extracurricular activities than normal achievers, Mercer (1987:273), postulated that a lack of social skills can be as incapacitating as academic deficits.

3.3.4.5 *Social factors*

Research reports bear witness to the fact that learning disabled children manifest noteworthy difficulties with social adjustment and acceptance and are noticeably at risk for social interaction difficulties in the school situation (Bryan 1982:332). Pragmatic competence is dependent on memory (to monitor and retrieve experiential information and rule knowledge) and the ability to infer (which requires knowledge of social interactions and the motives behind human actions), in order to make sense of the cues of intonation, stress, gesture and understanding from situational cues. Learning disabled pupils have difficulty with non-verbal communication resulting in an inability to read situations, body language, facial expressions and the tone of voice. (Menyuk 1984:103). Significantly, memory and the ability to infer are significant requirements for successful reading comprehension (cf. 2.3.6). Learning disabled pupils have also been found to lack sympathy and empathy towards others and be insensitive to the atmosphere in a particular situation (Booyse 1987:78). According to the findings of Maheady and Maitland (1982:368), the inept social skills in the learning disabled may be as a result of their lack of ability to listen, observe, integrate visual and auditory stimuli, understand the meaning of the stimuli or pay timely attention to relevant cues. All these abilities are required for the successful processing of information (cf. 2.2.2.3). In their studies on social interactions of learning disabled students, Bryan and Bryan (1978:37), found their communication style to be passive and they were described as negative and aggressive with inactive listening skills. Learning disabled pupils were found by Sutaria (1985:150), to have difficulties assuming personal responsibility, exercising self control, maintaining eye contact when talking, being cooperative, a lack of sensitivity to others' feelings, they often ignore affective

cues and misinterpret common emotional reactions resulting in inappropriate responses.

3.3.5 Resume

A concise description of the secondary school pupil with a learning disability has been given and it is evident that the manifestations as discussed in 3.3.3 have a significant effect on the pupils academically, motivationally, affectively and socially. Regarding reading, Hresko and Parmar (1991:26) state:

"One of the most pervasive characteristics of learning disabled children is the high prevalence of reading disabilities."

The learning disabled secondary school pupil with a reading comprehension deficit will now be discussed.

3.4 THE LEARNING DISABLED SECONDARY SCHOOL PUPIL WITH A READING COMPREHENSION DEFICIT

3.4.1 Introduction

In so far as reading comprehension is concerned the implications of the diagram (cf. 3.2.2 Figure 2) are significant. Reading comprehension only results when readers utilise their cognitive processes such as, attention, perception, encoding and memory (cf. 2.2.2.1) to change the graphic information to indicate their knowledge and experience. These processes together with linguistic, neurological and situational or contextual variables affect the construction of meaning (Wittrock 1981:251).

In the definition of reading comprehension used in this dissertation (cf. 1.2.5.1 and 2.3.2), reading comprehension is regarded as an holistic procedure involving the reader, the text and the context. How the reader is motorically, physically, cognitively, socially and affectively therefore, will affect overall performance. To explain the specific reading comprehension problems of the learning disabled secondary school pupil, the following manifestations will be addressed.

3.4.2 Physical and motor deficits

Physical aspects which are relevant to reading are hearing, sight and eye movements. As reading comprehension is the understanding of written language, an indirect relationship exists between hearing and reading as hearing plays such a significant role in the development of language. Sight is essential to correctly identify and read the written word (Dednam 1992:113).

Coordinated eyemovements are the work of the eye muscles and these are necessary for the retinal image of the item which has been fixated to be brought onto the fovea (Pavlidis and Miles 1981:106). Once the information has been received by the brain from the senses it must be interpreted meaningfully and that is the cognitive function of perception.

Sensory motor manifestations playing a significant role in reading are laterality and spatial relationships as letters form words in a specific order, directionally, within space. Laterality is the inner awareness of left and right and if this is established, reading, which is from left to right is facilitated. An unestablished laterality can result in reversals (u/n, w/m) and rotations (b/d, p/q). Spatial relationships facilitate the readers' knowledge of letter formation and therefore the identification of the letters (b,p,d,q,g,m,n,w)

(Dednam 1992:113). Whyte (1984:22) found that spatial deficits, excluding balance and posture, persist in impeding the learning disabled adolescent's performance and the ramifications thereof were significant. Areas of particular concern were visual perception, fine motor skills in general, including the ability to write and make spatial judgements.

Knowledge is acquired and manipulated by cognitive processes (cf. 2.2.2.1).

3.4.3 The cognitive processes

Intellect is not a single aspect but a complex process (cf. 2.2.2.1 (a)). A single intellectual quotient is no indication of a child's ability to read or comprehend what he is reading. Although the learning disabled pupil under discussion in this dissertation may have average or above average IQs (cf. 1.2.2.3.), their ability to comprehend what they read is below standard due to various factors and the heterogeneous nature of the syndrome (cf. 3.2.1). The intellect of the learning disabled child is adequate as the pupils must meet the criteria for enrolment to specialised education (cf. 1.2.2.3).

The assertion is made by Kirk and Gallagher (1989:190), that the cognition and mainly metacognition (cf. 2.2.2.1 (c)), of many learning disabled pupils is deficient. Anderson, Hiebert, Scott and Wilkinson (1985:12) cite the findings of Ashman (1984); Sternberg (1984) and Campione, Brown and Ferrara (1982) whereby learning disabled pupils have been found to be slow in processing problems, have difficulties in isolating problems requiring solving, initiating or selecting problem solving strategies and monitoring problem solving techniques. If-then relationships may be a source of difficulty and

their memories tend to be deficient as a result of a lack of organisation. There is also evidence of an impulsive cognitive style when collecting information from books and experiences.

Reading comprehension is the comprehension of written language and as such, it is a language process involving cognitive and psycholinguistic functioning both of which are vital to learning (Lerner 1988:359,360). Difficulties may be experienced by learning disabled pupils when linguistic and cognitive abilities are required to integrate in order to successfully execute a task. There may also be complications with the formation of concepts such as, classifying information, labelling experiences and solving conceptual problems may also hinder secondary pupils (Knott 1986:207).

Attention is an executive process for the processing of information. Learning disabled pupils who are hyperactive, have attention deficits, or are distractible, respond to all extraneous stimuli. Being continuously on the move and not directing information purposefully results in not sustaining attention long enough to facilitate learning (Kirk and Gallagher 1989:188,189).

3.4.3.1 *Attention*

Readers must 'attend' before learning can take place and although selective attention should reach maturity during adolescence, this is not always the case (Felsenthal 1988:42). According to Ross (1976:61), there is evidence of a developmental delay in selective attention in the learning disabled child, resulting in a slower focus of attention on the relevant aspects of the learning task. In drawing conclusions to the research on selective attention and memory on learning disabled pupils, Kauffman and Hallahan (1981:146),

significantly included the lack of or ineffective use of applicable learning strategies to facilitate selective attention and recall.

In order for reading for meaning to result, concentration is required. Whilst a lack of concentration in itself cannot be postulated as a reason for a breakdown in reading comprehension, it is exacerbated by several factors including eyestrain, the physical condition of the reader, fatigue, level of difficulty of the text, interest and distractibility (internal and external), (Harris and Sipay 1985:505,506).

Attention is necessary to make judgements of relevance. An inability to sustain attention will affect the reader's ability to find main ideas and monitor what is being read. Monitoring requires that each possible relevant association is recalled. This important task is also severely hampered in the learning disabled pupil (Larson and Gerber 1992:151). Poor readers, (this included learning disabled pupils), have been found by Ryan, Weed and Short (1986:383), to not pay attention to sentence and prose structures in an organised manner and fail to attend discerningly to the most important facts. Slater and Graves (1989:145) cite the research of Hidi and Baird (1986), Baumann (1982), Anderson and Armbruster (in press), who found that pupils can be distracted by information which is used as supporting evidence, or is interesting and in so doing constrains the preservation of main ideas.

Meaning must be given to that which has been attended to and perception is the process that does this.

3.4.3.2 *Perception*

Visual and auditory perception (cf. 2.2.2.1(ii)), are two abilities

specifically needed to be able to read. Word recognition deficits (cf. 3.5.1.1), can result when readers are unable to discriminate word details and sound differences and recognise words without paying attention to details. Difficulties in remembering symbols and their word formations will negatively affect word recognition as will an inability to associate sounds and their graphic representation. Word recognition will also be negatively affected by analysis and synthesis difficulties on a visual and auditory level and an inability to distinguish between that which is relevant from the irrelevant (Mercer 1987:130,131).

3.4.3.3 *Thinking*

Learning disabled pupils may be deficient in the recognition of meaning which, according to DeRuiter and Wansart (1982:48) may manifest in impulsive guessing lacking in reflective thought (cf. 2.2.2.1 (iii)). Learning disabled pupils may have difficulty identifying meanings and this has been found to affect their abilities in pattern and word recognition, syntactic and semantic relationships and social interactions (DeRuiter and Wansart 1982:49). Deficits may be present in combining the identified meanings with other relevant meaning through problem-solving techniques, such as, analysis, synthesis and organisation (cf. 2.2.2.1 (iii), (DeRuiter and Wansart 1982:49,50). The ability of the learning disabled pupil to infer meanings beyond those already identified and associated, may be hampered by deficits in creative problem-solving, the ability to determine cause and effect and predicting outcomes (De Ruiter and Wansart 1982:52).

The reliance upon what one already knows and perceives, emphasises the significant role of the memory, as this knowledge must be available for retrieval and later use (Samuels and Kamil 1984:206).

3.4.3.4 *Memory*

Secondary school pupils are expected to read, learn and remember voluminous amounts of information. The skills needed to perform this task differ from those utilised in the primary school because the purpose for reading now is not an end in itself but rather to learn explicit information to carry out a standard assignment (Anderson and Armbruster (1984) as cited by Wade and Reynolds 1989:6).

Torgesen & Wong (1986:100) are of the opinion that short-term memory deficits could explicitly debilitate context comprehension. Readers have been known to understand what they read but have not been able to remember the information. Short-term memory with its limited capacity, very brief persistence, very fast input and immediate retrieval will be affected by one's degree of attention, the meaningfulness of material, the pupils' interest in the subjects and the amount of practice and overlearning (Lerner, 1988:185; Smith 1982:51). Learning disabled pupils have been found on short-term memory tasks to lack the ability to adapt to the requirements of the task through the use of strategies (Torgesen and Greenstein 1982:57). Memory is affected by deficits in the formation and maintenance of phonological codes in the short-term memory where comprehension processes are dependent on the use of verbal codes.

Anxiety can have a detrimental effect on one's competent use of the brain's inherent abilities, in that learning disabled pupils know what their problems are and the anxiety which results, hampers the efficient working of the memory. Poor readers were found by Paris and Myers (1981:21) to retain less content of the stories as a result of anxiety. These researchers also found that learning disabled pupils had particular difficulties with forgetting, their recall was less organised and there was a lack of organised memory.

In constructing meaning, the gap between the written text and the reader's knowledge must be bridged by relating language sequences to experiences and conceptual structures in memory. The message will not be understood if the language cannot be processed, but the language cannot be processed unless the relevant experiential, conceptual background is available from memory to be brought to the task (Menyuk 1984:113).

3.4.3.5 *Language*

For Wallace and McLoughlin (1988:31), learning disabilities are predominantly a language based disorder. A language deficit is evident when difficulty is experienced with understanding or the application of language, be it spoken or written (Swift 1988:320). Learning disabled adolescents participating in the language and communication section of Whyte's (1984:23) study, testified to the debilitating effects of specifically, listening, understanding or processing visual and auditory information and the ability to express themselves. Syntactic and semantic information is correlated with morphological information to effect meaning from the graphic information. As the reader reads, continual adjustment of both meaning and the tentative processing of language information takes place (Goodman 1972:154). A study

conducted by Abrahamsen and Shelton (1989:571), investigated the effects of semantic and syntactic knowledge of learning disabled adolescents on reading comprehension. The results indicated that a lack of comprehension may be due to language deficits. Kauffman and Hallahan (1981:153), maintain that irrespective of whether the origins of the linguistic difficulties perceived in the learning disabled are incompetent phonological skills or insufficient understanding of contextual meaning, it is apparent that learning disabled pupils find it very difficult to attain these skills believed to be decisive for academic achievement. Attention is drawn by Menyuk (1984:112), to the significant fact that as language and linguistic processing abilities develop so the level of difficulty of the reading material increases. In many cases the development of the one accords the development of the other, but this does not always happen. Snider and Tarver (1987:355), confirmed this with their finding that as learning disabled pupils get older, language deficits and difficulties with the acquisition of knowledge, confound reading even more.

Reading comprehension is considered by Harris and Sipay (1985:444,446,447), to be affected by a lack of knowledge of word meaning. A paucity of word meanings limits readers. A lack of an oral vocabulary will have repercussions with regard to the acquisition of a meaning vocabulary and ultimately affect reading comprehension. Pupils who lack the required oral language may have difficulties with the organisation of their performance, the awareness that cognitive operations prevail and the use of strategies to expedite their work or when to use which strategies (Westby 1992:13).

Harris and Sipay (1985:467) refer to McNeil's (1984) statement that the surface structure of a sentence does not always lend itself

to the meaning of the deep structure (cf. 2.2.1.2 (v)). The further the two structures are apart the greater the responsibility of the reader to make alterations so that the meaning in the deep structure is understood. Learning disabled readers may have difficulty in making these required alterations. Long sentences or sentences containing many concepts make understanding difficult as do those where syntactic complexity, beyond the capability of readers, is evident (Harris and Sipay 1985:468).

The ability to make decisions requires different metacognitive abilities such as identifying significant information and constituting criteria for establishing whether one is understanding (Baker and Brown 1984:36). If one is unaware of a breakdown in comprehension then the corrective action required will not be carried out. Evaluation must precede regulation so complications with one will automatically affect the other (Baker 1984:289,290). Regulation and evaluation are metacognitive skills.

3.4.3.6 *Metacognition*

Learning disabled pupils often lack metacognitive skills (cf. 2.2.2.1 (c)), in that difficulties are experienced in their awareness of tasks, performance and strategies. They do not always understand the demands of the task and therefore knowing which information is relevant to success and therefore necessitates more attention. They do not know what they know regarding strategies and their benefits and which strategy to use to accomplish the task (Wade and Reynolds 1989:7; Wong 1991b:11). According to Larson and Gerber (1992:127), learning disabled pupils may experience difficulties choosing and controlling cognitive strategies efficiently. Two general categories hampering successful reading are classified by Baker and Brown (1984:33,35): defective rule and strategy

application and a lack of background knowledge. Background knowledge may not only be lacking but there may also be a lack of metacognitive awareness that prior knowledge should be used to make sense of the text. Another significant metacognitive awareness that is often found lacking in learning disabled pupils is the knowledge that the text can be utilised as contextual clues to decode unknown words. Flavell (1985:109) cites Baker's (1982) research which identified the following metacognitive deficits, the purposes of reading are not understood, a lack of flexibility in applying strategies for different reasons, main ideas in the text are not recognised, new and prior information is not associated, a lack of identification of the basic coherent textual structure, a lack of attention to syntactic and semantic limitations, textual clarity, intactness and consistency is not assessed, breakdowns in comprehension are not managed and decisions as to how well subject content must be understood are not made.

The purpose of the reading task influences the rate of reading (cf. 2.3.6), but learning disabled readers have been found to read at the same rate for materials irrespective of the level of difficulty and they read in the same way for insignificant and significant information. The same strategies were used when trying to get a general overview and when learning specific details. Reading was uncritical and an inability to focus on relevant information is also noted (Brown and Campione 1986:1063).

Reading comprehension may also be affected by the limitations in the information processing abilities of the learning disabled.

3.4.4 Information processing

The information processing theory (cf. 2.2.2.3), acknowledges that

meaningful learning is dependent upon the learners' ability to correctly interpret and understand situations. To explain the learning disabled pupils' difficulties with information processing, it is necessary to look at the following functions.

3.4.4.1 *Executive functions*

The control or strategy component (cf. 2.2.2.3 (i)), is responsible for the direction and co-ordination of cognitive activities. Torgesen and Wong (1986:368), found that the inability of learning disabled pupils to selectively attend, organise their learning material, use mnemonic and comprehension strategies and remain task orientated contributed to their lack of participation hence the appellation: " passive/inactive learners". For Reid (1988:13) a production deficiency is evident in the non-performance of applicable cognitive strategies to fulfil task requirements. Lower level processes, for example word identification and higher level processes as in reading comprehension, are required to use the available resources in common. If decoding is not routinised and therefore automatic requiring minimal processing, the means required for reading comprehension will be drawn on, thus jeopardising comprehension. Differences in lower level linguistic skills evident in word identification and memory, result in individual differences in reading comprehension skill (Perfetti 1986:15; Winograd and Johnston 1982:62).

3.4.4.2 *External input*

External input will not be registered correctly by readers with auditory and visual perceptual deficits (cf. 3.4.3.2; 2.2.2.1 (ii)). Letters (m/n) or words (was/saw) may not have been correctly discriminated. Words may not have been seen in the correct

sequence (elephant/ephelant) or irrelevant information may have been focussed upon as opposed to the relevant. The external input of the learning disabled is insufficient.

3.4.4.3 *Sensory register*

Information which is not perceived correctly will affect reading performance (cf.3.4.3.2). Goodman (1972:148) states that a misperception may be the consequence of "inadequate selection of visual cues, predictions at variance to the text, or misprocessing of the selected visual cues". He continues by saying that the reader may not be able to process the written information so that it generates information about the language which can be processed. Illegible handwriting or print which has been partially erased may not provide sufficient information for the learning disabled reader to process effectively.

The effects of incorrectly perceived information will pervade into memory.

3.4.4.4 *Memory*

Memory has been defined as the ability to store and retrieve information (cf.2.2.2.1 (iv)) and according to Howe (1970:35), there are three stages of memory: reception, storage and retrieval. If information has not been attended to competently and selectively as in the case of the learning disabled (cf. 3.3.3.2), the reception of the information in the memory will be affected. Harris and Sipay (1985:446), refer to the research of Chabot, Petros & McCord (1983) Kagan (1983) who believe that poor readers are slow to recall information which has been stored.

The implication is that inadequate information processing at this stage makes the retention of information in short term memory too brief to facilitate the integration of semantic information or perhaps difficulties retrieving word meanings require attention to be redirected and thus hinders comprehension. Encoding deficits are evident in difficulties with recall of internal stimuli in the form of ideas, words/movements that will communicate intended meaning, difficulties with the organisation of internal stimuli sequentially to convey intended meaning and the monitoring of responses to determine accuracy (De Ruiter and Wansart 1982:53,56,57). The process of reading requires that visual symbols (each letter or word) are decoded (checked against information in the long-term memory and the verbal name) in order to promote the processing of the information from the sensory register to a higher level (Swanson 1991:142). The memory of the learning disabled may be affected as was previously mentioned (cf.3.3.3.4), by a lack of organisation in memory to facilitate storage, metamemory deficits, a lack of prior knowledge, anxiety, and a lack of insight into methods of working in one's own memory system. Difficulties may also be experienced when the pupil recalls less information than is required for the particular task. The control processes of rehearsal, organisation and mediation, play a crucial role as the amount and form of information which is committed to long term memory is dependent on them. Forgetting results when there are no retrieval strategies and if information which should be stored in long term memory is obstructed in any way. Items which have been stored incorrectly may also result in forgetting (Swanson 1991:143,144). There are many facets of memory (cf. 2.2.2.1 (iv)) and processing will be negatively affected by deficits in any of these areas.

3.4.4.5 *Motor activity*

The motor activity (cf. 2.2.2.3 (vi)), required in this particular instance is reading with meaning. However if difficulties have been experienced in any area of processing, the motor activity will be affected. If pupils are unable to attend correctly (cf. 3.3.3.3; 3.4.3.2), the external input (cf. 2.2.2.3 (ii)), will be incomplete. The sensory register (2.2.2.3 (iii)), will be limited by perceptual deficits as mentioned previously (cf. 3.3.3.2; 3.4.3.3). Memory deficits (cf. 3.3.3.4; 3.4.3.4), will affect the performance of the short-term, working memory and long-term memory (cf. 2.2.2.3 (iv), (v)). Language difficulties (cf. 3.3.3.6; 3.4.3.5) and physical and motor deficits (cf. 3.3.3.1; 3.4.2), will also hamper the motor activity.

The inadequate information processing of the learning disabled pupil is summarised graphically in the following diagram.

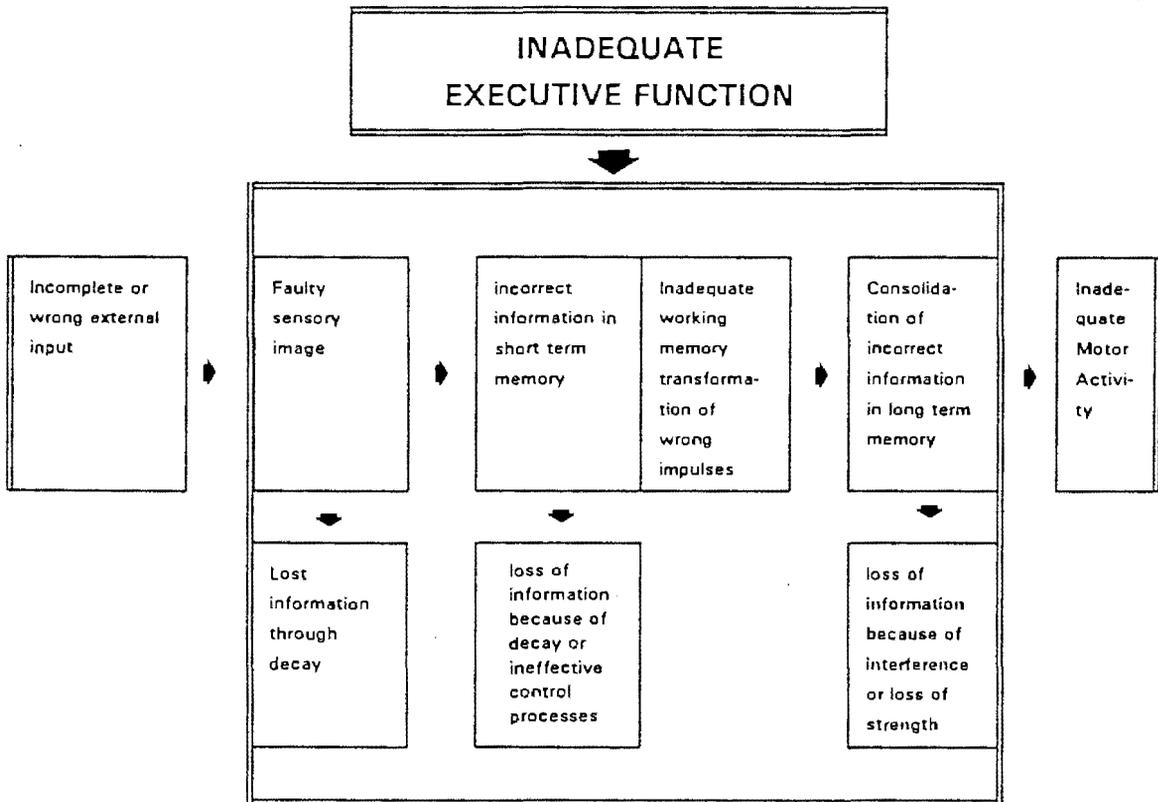


Figure 15.

As a result of this discussion about the learning disabled pupils' inadequate information processing, attention will be specifically focussed on the detrimental influence thereof on the quality of reading comprehension.

3.5 READING COMPREHENSION OF THE LEARNING DISABLED SECONDARY SCHOOL PUPIL

3.5.1 Introduction

The difficulties experienced by learning disabled readers with a reading comprehension deficit need to be seen against a background of what should happen when reading for meaning is taking place. In order to be able to give one's full attention to reading comprehension, decoding should be automatic (Gaskins, Downer, Anderson, Cunningham, Gaskins and Schommer 1988:37). In chapter two reference is made to the fact that in order to successfully comprehend a reader must construct a complete and compatible representation of the meaning in the text (cf. 2.3.2), the significant facets of which should be stored in long term memory (cf. 2.2.2.3 (v)). Readers are also required to incorporate the information gleaned from the text with their prior knowledge so that the knowledge can be integrated and expanded upon (cf. 2.3.3.1 (ii)). Readers should be able to generalise and transfer this knowledge to new situations (Spiro and Myers 1984:489). Good comprehenders use contextual cues and draw on schemata to interpret the information they have gained from the text. As they continue to read they continually assess whether their schema concurs with the new incoming information. If it does, the reader is then in a position to make predictions regarding what will happen further in the text. Should the schema not concur with the incoming information, modifications need to be made or the schema must be discarded and a more appropriate schema must be found (Wade 1990:442,443); (cf. 2.3.3.1 (ii)). It is against this background that the difficulties experienced by learning disabled poor comprehenders must be understood.

Reading comprises word recognition and comprehension, (cf. 2.2.4.1), so reading comprehension processes are at risk if word recognition processes do not attain high levels of efficiency.

3.5.1.1 *Word Recognition*

Secondary school pupils are confronted by many new words in their text books. The technical vocabulary (cf. 2.2.4.2), in particular poses problems for learning disabled pupils. Poor readers often do not comprehend reading material as the words in the text are neither in their sight vocabulary nor automatically decodable. A low level of decoding was found by Anderson, Hiebert, Scott and Wilkinson (1985:10), to impede reading comprehension. The attention and comprehension of reading disabled pupils has often been found to be hindered by slow lexical access (Snider and Tarver 1987:352). Deficits in the use of phonological information may affect the recognition of sight words and decoding (Munro and Munro 1994:18).

A lack of *word attack skills* will affect reading performance. The reading ability of many of the learning disabled adolescents in Whyte's (1984:23) research was found to be below the literacy level. Sound blending was also a problem area with 26% experiencing significant difficulty and an additional 19% experiencing a moderate difficulty. Munro and Munro (1994:18), state that the blending of sounds in learning disabled readers may be affected by difficulties in the construction of orthographic information (cf. 2.3.3.1 (a)) about words and groups of letters. Munro and Munro (1994:18,19) continue by stating that difficulties recalling the meanings of written words during silent reading, may be as a result of inadequately developed links between the orthographic hierarchy and the readers' knowledge of

concepts. This may also result in difficulties saying irregular words even though they can comprehend written words through matching with their referents or through descriptions of the word. The reading of poor and learning disabled readers entering secondary school with oral reading difficulties has been found to be characterised by word substitutions, poor comprehension, lack of expression, punctuation difficulties, loss of place when reading and word for word reading (Alley and Deshler 1979:64). To this list Mercer (1983:309), adds omissions, insertions, reversals, mispronunciations, transpositions and slow choppy reading. From this description it can be clearly understood why the fluency of learning disabled readers is hampered.

Successful reading comprehension may be impeded when readers do not have the necessary prior knowledge, do not activate it or use it to full capacity.

3.5.1.2 *Lack of prior knowledge*

Schemata or knowledge structures (cf. 2.3.3.1 (b)), are decisive in reading comprehension and their proficient initiation during reading facilitates effective reading comprehension (Perfetti 1986:16). If learning disabled readers do not pay the necessary attention to this knowledge but rely too much on the text or do not attach the required significance to the text, reading comprehension will be hampered (Harris and Sipay 1985:482,483). When required answers are not explicitly evident in the text, the inferences which are necessary to answer the questions are not made due to the learning disabled reader's difficulties with the understanding of textual relations, the inability to predict and use prior knowledge (McDonnell 1986:257). The lack of prior knowledge may also result in learning disabled reader's impressions of the topic under

discussion diverging. They may also experience difficulties understanding the relationships between facts they know regarding the topic (Anderson, Hiebert, Scott, Wilkinson 1985:10).

There are three types of comprehension (cf. 2.3.4) and it is implied that each level of understanding requires more advanced cognitive functioning.

3.5.1.3 *Deficits in the types of comprehension*

(a) *Literal comprehension*

Secondary school pupils are required to recall historical dates and facts, sequences in experiments (science and biology), and sequences in Maths. If incorrect sequences are recalled (cf. Figure 3 in 3.4.4.4), the facts will sound illogical, the experiments will not work out and incorrect answers to the Maths problems will result. Literal comprehension deficits in learning disabled readers are evident when difficulties are experienced with understanding words, phrases and sentences, in particular words with multiple meanings as these require a dependence on contextual clues. The right interpretation will be contingent upon the reader's cognitive and linguistic abilities as well as their experiential background. However, the deficits in the cognitive processes (cf. 3.4.3) and linguistic abilities (cf. 3.4.3.5), which may be experienced by learning disabled pupils and thus affecting literal comprehension has been documented. Literal comprehension may also be affected by a non recall of facts and details. Memory deficits (cf. 3.4.4.4) or insensitivity to the significance of reported facts and details may be contributing factors. There may be too many facts and details, the discrimination between main and less important facts may be difficult or the passage may be too lengthy. Sequential memory

deficits will also play a role. There may be a difficulty in locating information. This is probably due to the lack of ability in learning disabled pupils to consult sources, for example, indexes, cues from key words, print and subheadings, to mention a few, and difficulty grasping the main idea (Sutaria 1985:282-284; Wallace and McLoughlin 1988:135).

(b) *Interpretive comprehension*

Interpretive comprehension requires that ideas and information not explicitly stated in the passage must be understood. There is a heavy reliance on the ability to think inferentially (cf. 2.3.4.2). When difficulty is experienced making inferences, difficulties with interpretive comprehension are apparent. There is a need to think similarly to the author and to be able to evaluate and compare. If the author's reasoning is beyond the learning disabled reader, inferential questions will not be understood and answered. Darch and Kameenui (1987:82) cite Hansen & Lovitt's (1977) claim that disabled reader's inferential ability in reading comprehension receives minimal fostering. Difficulties may be experienced with understanding relationships requiring the reader to reason logically. There may be difficulty differentiating between reality and fiction. Learning disabled readers usually lack the ability to make judgements. Drawing conclusions may prove a problem as may the integration of new thoughts with previous information. Learning disabled readers experience difficulty analysing information which is at variance. Difficulty summarising content possibly as a result of semantic-syntactic deficits, memory deficits, difficulty in grasping main ideas and organising material, will result in an inability to paraphrase and summarise subject material (Sutaria 1985:284,285; Wallace and McLoughlin 1988:136).

(c) *Critical comprehension*

To critically comprehend readers must read beyond the lines (cf. 2.3.4.3). Learning disabled pupils may find critical comprehension difficult as a result of their inability to distinguish fact from opinion, such as in advertisements. Critical comprehension in learning disabled readers may further be exacerbated by an inability to judge the accuracy of information due to the limited availability of reading resources, an inability to evaluate logic used to draw conclusions and an inability to evaluate the author's views and meaning. The last two mentioned are exacerbated by difficulties in transferring or generalising knowledge in problem-solving situations (Sutaria 1985:285,286; Heilman et al, 1986:190).

The consequences thereof are far reaching and the learning disabled's metacomprehension (cf. 2.3.3.1 (d)), is consequently impeded.

3.5.1.4 *Metacomprehension*

Metacomprehension is the knowledge and control readers have over their own cognitive activities during reading (cf. 2.3.3.1 (d)). Metacomprehension deficits are evident when there is a lack of awareness of task requirements, knowledge of strategies and a knowledge to facilitate the selection of applicable strategies (Wong 1991b:11). Learning disabled pupils with metacomprehension deficits are characterised by insufficient knowledge about themselves as readers, they have insufficient knowledge of reading and reading tasks, or are unable to employ monitoring strategies while reading. Knowledge about comprehending (self evaluation) and how to comprehend (regulation) is lacking (Bos and Filip 1984:229; Wong and Jones, 1982:238).

Regarding the reader's knowledge about reading and reading tasks, Garner (1987:127) found that less able readers have misapprehensions regarding the reading process. Less able readers do not seem to be aware that the purpose for reading is to extract meaning from the printed text, rather than a decoding process. It is possible that priority is given to decoding in reading instruction and poor readers who have of necessity to pay more attention to decoding, never go beyond it to the real reason for reading, that is, meaning (Brown and Campione, 1986:1063).

Research by Paris and Myers (1981:21) confirmed that a lack of comprehension monitoring skills contributed significantly to the difference in performance between good and poor readers. Poor readers did not ask questions, make notes or utilise dictionaries and as a result cognisance was not taken of comprehension breakdowns and thus not remediated. They also lacked awareness of the influence of counteractive strategies. Bowman & Davey (1986:251), observe that learning disabled readers' monitoring usually consists of focussing on graphophonic correctness at the expense of the use of contextual cues. According to Reid (1988:169), an inability to use contextual information to initiate expectations and activate background knowledge is also evident. Wade (1990:443) attributes a lack of comprehension monitoring to the way text is processed (cf. 2.2.2.3). Top down processors rely too much on prior knowledge and bottom up processors concentrate too much on the text and are too taken up with decoding to go beyond to the meaning of the text.

Some pupils are not aware of their lack of understanding and therefore do not apply strategies to correct the situation (Maria 1990:34). The reader may have the strategies but may not be able to utilise them. A production deficiency is used to describe this

failure to use strategies spontaneously. According to Wiens (1983:146), this production deficiency (cf. 3.3.4.3) validates the description of learning disabled secondary school pupils as "passive, dependent and lacking strategies". Passive learners lack interest possibly due to frequent failure and frustration. They have no confidence in their ability to learn and therefore lack the knowledge of how to learn. They are passive, inactive and dependent (Torgesen and Licht 1983:3; Lewis, 1983:234). An important part of the development in strategy use is the ability to extend the use of strategies generally. However, there is also evidence that if strategies are learnt they are only applied in that particular situation, with no generalisation or transfer to other situations (Reid 1988:13).

Much of the research into reading comprehension has revealed that learning disabled pupils find it difficult to explain the goal of reading, focus attention on the important details, keep track of inconsistencies in one's comprehension level, reread or scan ahead and use secondary sources, for example, a dictionary (Hallahan, Kauffman, and Lloyd 1985:99).

The involvement of people influences the learning process and the fact that many learning disabled pupils experience social and/or emotional problems is not amazing as either state can generate the other and pupils who have reading deficits may have equivalent difficulties learning about people (Bryan and Bryan 1977:141).

3.5.1.5 Affective, motivational and social characteristics of the learning disabled pupil with a reading comprehension deficit

Constant failure as experienced by learning disabled pupils can affect their attitude towards reading. Comprehension in turn, can be affected by a reader's negative attitude towards reading.

Gentile & McMillan (1987:176) state that learning disabled pupils with reading deficits, perceive themselves negatively and presume poor performance and failure consequently, they fulfil their expectations by doing badly and failing. The reader may have all the skills required to comprehend successfully, but the negative attitude towards reading hampers performance. It has also been found that learning disabled readers with negative attitudes towards reading do not fulfil the reading requirements as well as readers with a positive attitude (Cooper 1986:15).

Reading requires motivation and according to Anderson, Hiebert, Scott and Wilkinson (1985:14,18), skilled reading is motivated.

(a) *Motivation*

Learning disabled pupils with reading comprehension problems are often not motivated to read as they find it difficult to read for meaning and the reading material is often too difficult. The research of Anderson, Hiebert, Scott and Wilkinson (1984:15,16) revealed that poor readers were helpless to improve and their attitudes towards reading were negative. In addition poor readers were found to be listless, inattentive, disruptive at times, did not complete their work, gave up in the face of tasks perceived as too difficult and became very anxious if required to read aloud or were tested. Harris and Sipay (1985:449), proclaim that interest in what is being read plays a major role in deciding how much time and energy will be expended.

The nature of the text plays a role in that the informing nature of expository text may not be as interesting for pupils as the narrative (Olson and Gee 1991:299). If one considers that most of the subject content in the secondary school is expository, this is a valid

point.

Parents tend to accept that their children have reading difficulties and therefore do not aspire for them. Lower expectations affect teachers' reinforcement and instruction methods (Maria 1990:35). Pupils then live up to these lower expectations of the parents and teachers in the absence of higher aspirations.

Reading is a communicative process between the author and the reader and because it involves relationships among people for example, teachers and pupils, parents and children, authors and readers, therefore reading is a social process too.

(b) Social factors

How one reads has a definite influence on the social standing and rank of readers. Learning disabled pupils and poor readers are not recognised as having good social standing or rank. Teaching environments where reading groups are formed according to ability have been found to exacerbate their feelings of inadequacy and beliefs that they occupy the lower strata of the classroom reading hierarchy (Turner 1992:51).

The factors affecting the reader are mainly internal. However the reader cannot be seen in isolation as, according to the definition of reading comprehension used in this dissertation (cf. 2.3.2), reading comprehension is an holistic process of constructing meaning from written text through the interaction of the reader the text and the context. The text and the context will therefore have an immense impact on reading comprehension but they are external to the reader.

3.5.2 External factors affecting reading comprehension

External factors affecting reading comprehension are the text and the context in which the text is read. In so far as the text is concerned readers need to interpret the language that the author uses to construct the text (cf. 2.3.2). In the secondary school there is a heavy emphasis on the use of text books.

3.5.2.1 *The text*

Learning disabled pupils are required just as any other secondary school pupils, to work independently. The inability to read seriously hampers this prerequisite. Word recognition (cf. 3.5.1.1), is a significant difficulty for learning disabled secondary school pupils. The text books are usually written at several grade levels above their reading ability. The vocabulary forming the learning content in secondary school text books more often consists of unfamiliar, multisyllabic and difficult words requiring quick word attack and identification. The ability to do this is significant as in order to adequately comprehend, the pupils must be able to cope with the many content-specific words. Most learning disabled secondary school pupils do not have the time or the inclination to be instructed in word attack skills (Perfetti 1986:15). Inadequate text processing may be evident. Learning disabled readers in processing text, tend to analyse single word units as opposed to meaningful phrases. This segmentation results in too many pieces of information to be remembered and thus meaning is lost (Reid 1988:169).

Understanding informational text can also be a source of difficulty for learning disabled pupils as a result of their unfamiliarity with expository text and the way it is organised. They have been

widely exposed to narrative through the basal reading programmes and it is also the type of text mostly used in the primary school situation. Text which is disorganised or is detached from the pupils' experience, can contribute to a lack of understanding of what has been read (Pearson and Raphael 1990:227).

The research findings of Capelli and Markham (1982) regarding difficulties with text structures, experienced by learning disabled readers are cited by Englert and Thomas (1987:102). Learning disabled readers were found to be less perceptive at detecting standard text structures and in using the interrelationships conveyed by the text structures to make predictions regarding appropriate details to follow. Without hypotheses, relevant details could not be differentiated from the irrelevant and a lack of comprehension could not be monitored as there were no predictions to be affected by any conflicting information.

Difficulties experienced by the pupils themselves have often been exacerbated by the teaching context.

3.5.2.2 *The context*

Teachers and the classroom environment form the teaching context and it is a contributing factor to the problems experienced by learning disabled secondary pupils. The following are some factors which can aggravate successful reading comprehension.

- (a) Secondary school pupils are not taught reading comprehension (cf. 4.1). Lamb and Arnold (1988:328,329) testify to the allusion held by some teachers that teaching reading is someone else's responsibility and this has serious repercussions for secondary school pupils.

- (b) Teacher misconceptions may also be another reason as to why learning disabled secondary school pupils struggle with reading comprehension. Some teachers were of the opinion that phonic skills were more important than content area instruction. Some felt that there was no difference between the processes involved in comprehending content area text and basal reader narratives (May 1986:66). It would appear that there is a general assumption that skills and strategies will emerge automatically and therefore no instruction is required. There may also be a lack of knowledge and/or understanding that some secondary pupils do still struggle with the basic skills. On the basis of these misconceptions, demands are made of the pupils which they are unable to fulfil and this serves to exacerbate the situation.

The majority of secondary school teachers of learning disabled pupils do not have formal training in the teaching of these pupils. A remedial diploma is a recommendation not a requirement for teachers applying for posts in Specialised Education.

- (c) An instructional constraint is something in the teaching-learning situation that limits what is learned (May 1986:66). As such teacher made constraints can also exacerbate the learning disabled pupil's inability to comprehend what is read.
- A word-emphasis whereby pupils are required to pay intense attention to decoding each word correctly, results in the ignorance of the availability of syntactic and semantic clues for meaning in the context. This bottom-up (cf.2.2.2.3), emphasis can result in pupils reading as word-calling and not for meaning, thus limiting growth capacity in reading.

Substitutions, insertions and omissions which do not interfere with the author's meaning, should be allowed (May 1986:63).

- The time chosen by teachers to ask comprehension questions is the second constraint. If questions are left to the end of a selection, memory is then being tested and not understanding. A pupil may not be able to answer questions as a result of poor memory but still have good comprehension of the story. Comprehension must be monitored while pupils read (May 1986:63-65).
- A third constraint is in the audience to which pupils read. A pupil's comprehension of what he is reading may be interrupted by discomfort in having to read to an audience or in a situation in which he feels insecure (May 1986:63,64,65).
- The manner in which teachers ask questions and the type of questions asked can constrain comprehension. The formality or informality of the situation and the teachers' body language are all contributory factors. If teachers only concentrate on literal questions and do not encourage interpretive and creative questions generating inferential thinking, pupils will disregard the whole story in order to search for the right answer (May 1986:66). Teachers often do not allow pupils time to think about their answers to questions posed. Cognisance must be given to the fact that pupils need to understand and remember the question, recall and retrieve the information and be able to decide whether their information is adequate to answer the set question (Harris and Sipay 1985:491,492)

3.5.3 Resume

Reading comprehension will be influenced negatively if it is a low priority, there is little or no systematic comprehension instruction and decoding is emphasised at the expense of comprehension (Maria 1990:21). Inadequate functioning in any area of the reader, text and context will result in an inability to construct meaning through active interaction. Reading comprehension will therefore not take place. This is diagrammatically demonstrated as follows.

INADEQUATE INTERACTION OF

THE READER	THE TEXT	THE CONTEXT
Learning Processes intellect cognition thinking attention perception memory language linguistic competence word knowledge syntax semantic knowledge metacognition	Content area textbooks text organisation content and topic language frequency and abstractness of words word identification of text book vocabulary	teacher-pupil interaction goals and purposes assessment physical and emotional environment peer influences
information processing		
word recognition sight words word attack skills prior knowledge interest and motivation metacomprehension		
goals of reading comprehension		
strategic reading		

INABILITY TO CONSTRUCT MEANING

UNSUCCESSFUL READING COMPREHENSION

Figure 16.

3.6 CONCLUSION

It must be acknowledged that learning disabled secondary school pupils have a great deal with which to contend in their combination of academic difficulties, learning disabilities, and adolescent characteristics. It is evident that any complications or weaknesses in one area offsets others. Academic achievement is dependent on pupils ability to read and the reader needs to experience success, be interested and motivated. Information processing difficulties, linguistic incompetence, limited metacomprehension and comprehension monitoring are not conducive to the secondary learning disabled pupils' reading comprehension ability.

All the characteristics of the secondary school learning disabled pupil must be taken into consideration not only for drawing up educational programmes, but to understand them and accept that their inability to learn is not deliberate and wilful. It is also evident that they need more than what is being offered in the education situation, particularly in the secondary school where there is such a reliance on the reading of text books meaningfully and the need to work independently. They need to be taught how to read with meaning as well as the necessary language structures. This requires that educators assume the responsibility to assist them as much as possible to become active learners who are able to take responsibility for themselves.

Reading methods to promote reading comprehension will now be considered.

CHAPTER FOUR

READING METHODS AND STRATEGIES

4.1 INTRODUCTION

In the United States of America the latest government report according to Hassett (1994:108), has divulged that "47% of the nation's adults, more than 90 million people, are functionally illiterate". Hassett (1994:108), asked her class of student teachers what they thought the reasons for this could be. Their responses made interesting reading and special mention is made of those pertaining to teaching: "we don't teach reading skills", "the curriculum has been watered down", "people don't think they need to work on these skills", "teachers aren't always aware that students have problems", "students live up to others' low expectations". The implication is that teachers have a great responsibility in so far as reading instruction is concerned. This is confirmed by Smith (1982:179) who says that "only teachers can develop the intuition, understanding and insight required to help children to read".

As reading comprehension is significant in any teaching, Hugo (1991:47), mentions that pupils in mainstream should be instructed in reading comprehension in order to be able to cope with their reading tasks, how much more so then, in learning

disabled pupils? It is the teachers who can make a difference but it is speculated that instruction in reading is inefficient (Jacobowitz 1990:620). The instruction of reading does not form part of the training of secondary school teachers, so knowledge is lacking and consequently less instructional emphasis in reading is evident in secondary schools (cf. 1.3). A source of concern for Pearson and Raphael (1990:224,225) is that:

"..the criterion-referenced tests accompanying basal reading programs do more to control the types of tasks that occupy the time and energy of students and teachers than any other singular force".

Their evidence is in the remarkable affinity apparent between the tests and the pervasive worksheets and workbooks appended to basal reading programs for readers to practice comprehension and thereby learn how to comprehend. In addition it would seem that the companies responsible for the basal reading programs ensure that the basal readers contain the skills included in the criterion-referenced tests. For Pearson and Raphael (1990), this results in an 'artificial 'real world' of reading tasks" for pupils and teachers in that there is no similarity to the tasks genuine readers perform in appreciating good literature and neither does it encourage critical reading. There are teachers' manuals and some series offer workbooks with comprehension exercises for pupils to complete. A heavy emphasis on literal comprehension questions is evident and it would seem that the rationale behind these worksheets and workbooks is that readers will learn to comprehend by practicing reading comprehension (Gearheart and Gearheart 1989:293,294).

Whether reading comprehension is instructed in the classroom situation, is very significant.

4.2 READING INSTRUCTION

4.2.1 The situation according to the literature

Reading comprehension instruction in elementary schools was investigated by Durkin (1978:524). Her findings were somewhat disconcerting and contrary to the widespread belief that the classroom is where instruction takes place. She found very little evidence of direct instruction in reading comprehension, in fact, less than 1% of 17,997 minutes (0,6 of 60 school days) of instructional time in elementary school reading and social studies classes is devoted to direct comprehension instruction. She also found explicit instruction on teaching reading comprehension in basal readers sadly lacking. Durkin found that reading comprehension was being treated as a subskill, an end in itself, thus the relation between the instruction and the children's reading was not clear. If reading instruction does not take place in the primary school, then it will not take priority in the secondary school.

The following findings from recent literature paint a very gloomy picture about the teaching of reading comprehension in the secondary schools. In spite of the changed view of reading comprehension (Cooper 1986:2), it would seem that in reality the changes are slow in taking place and in many cases the old methods of instruction are still the order of the day. There is still an ongoing emphasis on 'look and say' methods to teach reading, to which Orasanu and Penney (1986:1) had the following to say:

"The basic assumptions the ancient Greeks held about reading are the same ones that guide most instruction today."

Continuing in the same vein, Brown & Campione (1986:1063) testify that comprehension instruction is exceptional and poor readers are unlikely to develop sufficient reading comprehension skills in a situation where the aim is on mastering decoding skills. They believe that decoding is likely to be acquired ultimately but reading comprehension scores are liable to be "permanently severely depressed" if pupils are not instructed in reading comprehension.

For Wallace and McLoughlin (1988:136) the development of critical comprehension skills is disregarded by many teachers of pupils with reading disabilities. A concern expressed by Allington (1984:849) is that as pupils move into secondary school, "oral reading receives less instructional emphasis".

Masters & Mori (1986:103) testify to the fact that in the secondary school especially, there is a greater need for pupils to function on the higher cognitive levels. In order for them to compare, analyse, synthesise and generalise they must memorise, recall, integrate and implement what has been learnt. It is thus not enough to pay attention to 'what' has to be learnt, the 'how' it must be learnt is very important. The 'how' of learning will have a significant influence on reading, considering that thinking, learning and reading are intrinsically connected. According to Santa (1986:303), subject content is emphasised at the expense of the necessary attention to the teaching of reading comprehension. Frames of references are presumed and the process of learning is not taught. Moorman and Blanton (1990:174), presume that teachers may not be aware of the applicable instructional strategies or lack a frame of reference to organise, evaluate and make decisions regarding learning strategies. Garner (1987:110), gave the teachers' lack of

knowledge about how to teach reading comprehension as one of the reasons for the lack of direct instruction in reading comprehension in schools. Teachers need to be provided with conceptual frameworks to achieve strategic teaching as pupils need explicit instruction on how to learn.

They also need to make pupils metacognitively aware by instructing strategies to enable pupils to acknowledge when they are not comprehending and take corrective action (Mealey and Nist 1989:485). Schmitt & Baumann (1986:28), found no empirical evidence to suggest that metacognitive awareness is being stimulated or developed in the present instructional programs.

The question is then, what should reading instruction constitute?

4.2.2 Reading instruction as it should be

According to Chall's (1983) model of reading instruction as cited by Snider and Tarver (1987:351-356), reading development is viewed as the *achievement of more complicated reading skills and strategies resulting from competent reading instruction*. This is in opposition to the view that reading is the evolvment of more intricate reading abilities within the child as he/she gets older. There are five stages in Chall's model (Snider and Tarver 1987:351-356), and it is necessary for readers to become proficient in each stage before progressing to the next. The reading stages are as follows:

4.2.2.1 Stage one - initial decoding

Beginner readers need to be taught a sight word vocabulary (cf. 2.2.4.2) consisting of words which cannot be phonetically

analysed and synthesised. This is complemented by the teaching of phonetic analysis and synthesis of words as a word attack skill for words not forming part of the sight vocabulary (cf. 2.2.4.2). Automaticity in decoding facilitates stage two which is fluency.

4.2.2.2 *Stage two - fluency*

When words are recognised quickly and accurately, the indication is that decoding has become automatic and this leaves the reader the opportunity to concentrate on the comprehension of meaning. That reading with speed is necessary for successful reading comprehension has once again come to the fore. Fluent reading is a prerequisite for stage three, reading for meaning.

4.2.2.3 *Stage three - reading for meaning*

This stage is seen as a crucial one for the transition from the prominence of fluency to the prominence of comprehension. Having achieved accuracy and fluency in reading, the change in emphasis from decoding print to comprehending the meaning of the text can take place. The more one reads the greater one's core of knowledge becomes, which in turn facilitates reading comprehension, which is dependent on this prior knowledge stored in memory as schemata (cf. 2.3.3.1 (ii)). Prior knowledge plays a significant role in this stage as it is necessary to integrate previously attained knowledge stored in memory with new knowledge gained from reading to facilitate meaning. Contextual inference and analogical reasoning are two ways in which vocabulary concepts and information is obtained. Firstly readers can use the context (cf. 2.2.4.2), to accelerate word recognition (which mainly happens in stage two as part of decoding automaticity) and secondly to expedite remembering and

comprehending the text. When readers use the text to facilitate meaning it may promote the learning of vocabulary concepts but the speed of reading may decrease. The role of vocabulary and prior knowledge in reading comprehension, cannot be underestimated.

Analogical reasoning involves inductive reasoning whereby comparisons of old and new schemata are made. When new schemata do not fit a schemata already in existence, new schemata need to be formed (cf. 2.3.3.1 (b)).

The implications are that teachers must aim for automaticity in decoding in order to be able to emphasise fluency. *Instruction must take place in stage three and not stop once readers can automatically decode and read fluently.* Older pupils should be taught metacognitive processes and it must not be assumed that pupils have all the necessary preskills or schemata required for comprehension instruction. Opportunities to acquire prior knowledge should be given.

4.2.2.4 *Stage four - relationships and viewpoints*

In the secondary school, the reading material is more complicated, so it is at this stage of relationships and viewpoints that quality and quantity of reading is expected of readers. Higher order thinking skills such as comparing and evaluating what is read are heavily relied upon in the secondary school curricula and *metacognition* (cf. 2.2.2.1 (c)), is seen to play a vital role.

4.2.2.5 *Stage five - synthesis*

The synthesis of the acquired information in order to form

hypotheses takes place. A solid foundation of information formed in stages two and three facilitates the synthesis of information.

Stage three highlights the need for clues to understanding the text and the significance of prior information. A comprehension program including skills and processes to facilitate word recognition and relating to past experiences is recommended.

4.3 SKILLS AND PROCESSES REQUIRED IN A READING COMPREHENSION PROGRAM

In order to understand the text and identify relevant information, vocabulary skills are used as clues. Vocabulary skills take the form of contextual analysis, structural analysis (cf. 2.2.4.2) and dictionary skills.

In order to identify relevant information in the text, pupils need to be taught how to deal with narrative and expository text. Narrative text requires the identification of details and how the events of a narrative are related. In identifying the narrative details, the story structure is used by classifying the information according to the characters, setting, problem, action and resolution. Seeing how the events are related necessitates understanding cause and effect and the sequence of events.

In so far as expository text is concerned, the main idea and supporting details need to be ascertained. Pupils can be shown that relationships of ideas in expository text are conveyed through description, collection, cause-and-effect, response and comparison. The skills and processes are tabulated for easy reference as follows (Cooper 1986:10-13).

Clues to Understanding Text	
Vocabulary Skills	Identification of Relevant Information
-context clues	-narrative details (characters, setting, problem, action, resolution)
-structural analysis (prefixes, suffixes, inflectional endings, base words, root words, compound words, contractions)	-how are narrative events related (cause and effect, sequence)
-dictionary skills	-expository details -main idea and supporting details -relationships of ideas in expository text (description, collection (group or sequence of ideas), cause-and-effect, response (solution, answer, reply), comparison (similarities and differences)).

Figure 17

Processes and skills for relating to past experiences are also taught. Particular attention is given to inferencing (cf. 2.3.3.1 (b);

2.3.6), critical reading (cf. 2.3.4.3) and monitoring (cf. 2.3.3.1 (d)). Pupils can be taught to read critically by judging and evaluating what has been read by identifying facts and opinions, bias, assumptions and propaganda. Generally, pupils must endeavour to get the gist of the text and think about what the author is saying. They must be encouraged to question and make comparisons of the new information against their prior knowledge and perhaps refer to other sources of information. Pupils must also evaluate what they have read. Processes and skills for relating text to past experiences are tabulated as follows (Cooper 1986:10-13).

Processes and Skills for relating to Past Experiences		
Inferencing	Critical Reading	Monitoring
author's information	facts, opinions	summarising
plus prior information	bias	clarifying
	assumptions	questioning
	propaganda	predicting

Figure 18

It has been established that successful reading comprehension requires the construction of meaning through the active interaction of the reader the text and the context (cf. 2.3.2). Santos (1989:132) recommends that

"reading comprehension should be systematically taught,

and not be considered the inevitable and subsequent result of reading, even by skilled readers".

4.4 READING METHODS TO EXPLICITLY INSTRUCT COMPREHENSION

Four reading methods (The *directed reading activity* (DRA), (Betts 1946), cited by Bos and Vaughn (1991:165); Gartland 1990:248,249); the *directed reading-thinking activity* (DRTA), (Stauffer 1969) as cited by Bos and Vaughn (1991:166-168); the *think aloud* method (Davey 1983:45) and *reciprocal instruction* (Palincsar and Brown 1984:120), were selected from the literature because of the opportunity they afforded to *directly explain* how to interact with the text and construct meaning by modelling, defining and explaining strategies and processes that pupils need to use (Lewis 1983:235). In addition to having skills and procedures explained and demonstrated, the invisible cognitive processes required for successful reading comprehension are exposed through verbalisation. Knowing about the processes will enable the pupils to control them. There is also an opportunity for the pupils to receive specific corrective feedback on their performance.

Interaction implies active participation which in itself has an attentional element. In addition the reader's language skills (cf. 2.3.3.1 (a)), prior knowledge (cf. 2.3.3.1 (b)) and metacognitive skills (cf. 2.2.2.1 (c)), must interact with the linguistic requirements of the text (cf. 2.3.3.2) (Baker and Brown (1984); Meyer and Rice (1984); Rumelhart (1984) as cited by Santos (1989:132). Aspects which need to be explicitly taught then include, how to focus attention and actively participate in order to

understand what is being read, language structures, how to activate prior knowledge, use metacognitive skills to identify a goal, select a means of accomplishing the goal, monitor progress and achievement by evaluating and regulating and how to use the text. These aspects are graphically represented in the following diagram.

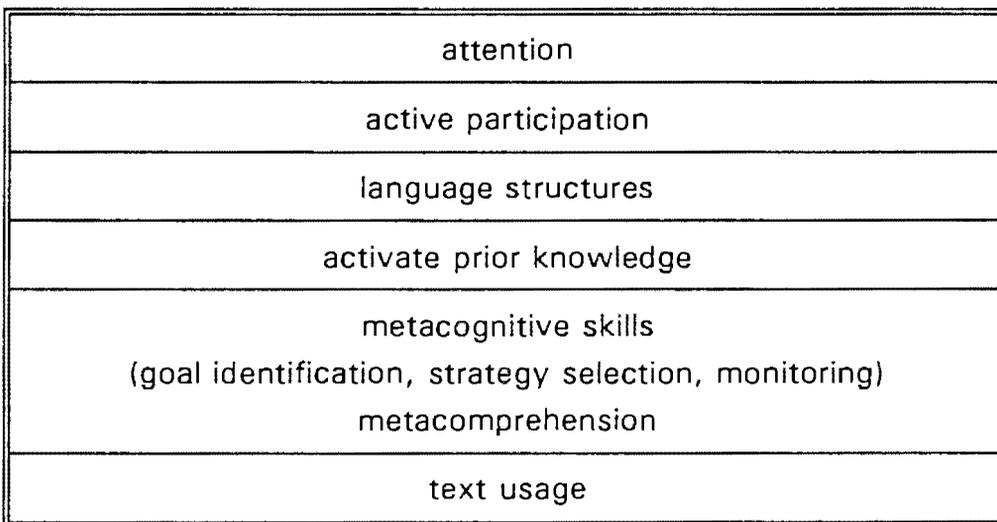


Figure 19

The following methods ensured active participation and offered the opportunity to be taught the *how* of learning.

4.4.1 The directed reading activity (DRA)

(Betts 1946), cited by Bos and Vaughn (1991:165); Gartland 1990:248,249).

There are three stages in the directed reading activity. These stages are:

- developing readiness,
- direct skill instruction and
- follow-up activities.

Developing readiness is the preparatory stage when topic concepts are introduced and explained. An interest in the topic under discussion is created and vocabulary is extended through the introduction of new words. As purposes for reading influence the selection of strategies required, they must be established. The teacher guides the reading prior to silent reading, allows pupils opportunities for silent reading, asks questions about what has been read, initiates a discussion about what has been read and encourages purposeful oral rereading.

During the second phase skills are directly instructed. *Direct skill instruction* includes the instruction of word recognition skills, comprehension skills and/or study skills necessary to facilitate understanding.

Ample opportunities to practice what they have been taught in different situations need to be provided through *follow-up activities*. These follow-up activities should aim to extend the development of the skills which have been taught as well as to enrich and generalise to different situations.

As reading is thinking (cf. 2.2.2.1), the directed reading-thinking activity (DRTA) of Stauffer (1969) as cited by Bos and Vaughn (1991:166-168), is advocated.

4.4.2 Directed reading-thinking activity (DRTA)

The DRTA aims at providing readers with the ability to decide on the purposes of particular reading task, extract, comprehend and assimilate information, predict while reading, suspend judgements and make decisions based on evidence gained from reading. The reading material used in the lessons may be expository or narrative

(cf. 2.3.3.2 (ii)), and at any level of difficulty.

Active participation by pupils is important therefore processing involves pupil and teacher actions.

The *pupil actions* include predicting (setting purposes), reading (processing ideas) and finding proof by testing answers. *Teacher actions* to assist the pupils with their actions include thought activation (what do you think?), agitation of thought (why do you think so?) and requiring evidence (prove it!).

As a summary, the directed reading-thinking activities are outlined.

- identify purposes of reading (individual, group)
- adjust the rate of reading according to the set purposes, (survey, skim, scan, read critically)
- observing the reading
- developing comprehension
- fundamental skill training activities (discussion, further reading, additional study, writing).

4.4.3 The think-aloud method

The think aloud method of Davey (1983:45), complements direct instruction as underlying strategies are explained and explicit reference is made to strategic conscious monitoring of cognitive activities through verbalisation. While teaching, the teacher models the cognitive processes which are at work by verbalising her thoughts out loud, thus enabling the pupils to see how they may use their cognitive processes in a reading activity. The following examples are given.

Predictions: "from this information it would seem that we are being warned that something nasty is going to happen". Pupils

can be encouraged to find the words that suggest warning and why the prediction can be made.

Visualisations: "I am making a mental picture of the scene". This is followed by a description of the scene.

Confusions: Confusing points need to be solved. "Now I am confused, first they said this and now they say this".

Fix-up strategies: "this does not make sense, I think I will read on, perhaps there will be a clue in the next few sentences".

"I was not paying enough attention, I will have to reread this paragraph".

"This word is a problem. I will have to use a word attack skill or read on".

Analogies are also shared. "This reminds me of that scene earlier when".

Thinking aloud procedures were extended by Bereiter and Bird (1985:143,144), to include the following:

- restatements/paraphrasing whereby information is verbalised again but the information is rephrased, summed up and referents are identified, "I am going to put this in my own words".
- backtracking or rereading is used to retrieve information, "I am going to reread this paragraph to find the reason for"
- deliberate attention is paid to relationships by using cause-

effect, statement support and demanding perspective or context.

- problem formulation takes the form of the recognition of a problem, specifying the exact problem and solving it by rereading or working it out, "there is a problem here"; "now what exactly is the problem?"; "I am going to reread it to try and work it out".

Think alouds can also be used for purposes of assessing as the pupils are asked to think aloud while they are reading a given task (Wade 1990:423,444).

The opportunity to work in small groups where pupils can practice and receive feedback about their processing is also essential. Palincsar and Brown (1984:120) have devised a method of *reciprocal instruction* which makes this possible.

4.4.4 Reciprocal instruction

Reciprocal instruction takes place in a cooperative learning group where guided practice is used to apply specific strategies (cf. 4.5), to facilitate reading comprehension. These strategies must be modelled in applicable contexts, focussing on text content and the pupils' understanding of the purposes of the strategy. The teacher takes the lead and models the strategy being taught. The pupils then take it in turn to lead the discussion incorporating the strategy and the teacher withdraws to play a supportive role providing feedback in the form of advice or providing additional modelling as and when required (Palincsar and Brown 1984:120).

The goal of this form of instruction is to encourage the

independent application of the strategies which have been taught. Pupils are encouraged to be active and they are also told when, why and where the strategies must be implemented (Brown and Campione 1986:1064).

Each reading method described above affords the opportunity for the direct explanation of *strategies that promote successful reading comprehension* through demonstration, modelling or defining. The specific strategies which are included in these lessons will be described in detail.

4.5 READING STRATEGIES

4.5.1 Introduction

Strategies have been defined as intentionally organised activities to facilitate learning (cf.1.2.6). The aim in the use of reading strategies in reading instruction would be for the pupils to internalise the strategies in order that they can be automatically implemented as skills. In this way reading comprehension would be promoted. According to Deshler, Alley, Warner and Schumaker (1981:415), pupils who are severely learning disabled need "very stringent and systematic instructional procedures in order to acquire and apply learning strategies." Strategies should also be taught in such a way that they will be used spontaneously. This can be done by the following method.

4.5.2 The step by step method

Deshler et al. (1981:416-418), advocate their step by step method for the teaching of strategies as it provides the pupils with the structure and support they require.

4.5.2.1 *Step 1: Analysis of current learning habit*

The pupils are asked to carry out a task dependent on the strategy to be taught. The conventional way in which pupils accomplish this task is examined and pupils are thereby made aware of the shortcomings. This sets the platform for pupils to experience the effectiveness of the new strategy being taught.

Example:

Strategy to be taught: skimming

Pupils were given an article on politics (not very long), from the local newspaper. They were asked to highlight the politicians named in the article. After seven minutes pupils were still reading. They were asked to describe what they did. The majority had read every single word.

4.5.2.2 *Step 2: Describe the new strategy*

Specific but simple instructions must be given describing what is expected of the pupils. The *reason* for the strategy being taught and every step must also be explained.

4.5.2.3 *Step 3: Model the new strategy*

Model the new strategy by demonstrating the steps while 'thinking aloud' (cf. 4.4.3). In this way a running commentary is provided. In both steps 2 and 3, pupils must be encouraged to ask questions. If questions were still lingering, full attention was not available for the rest of the instructional sequence.

4.5.2.4 *Step 4: Verbal rehearsal of strategy steps*

The sequence of steps must be internalised to automaticity by using verbal rehearsal before allowing pupils to practically implement the strategy. By verbally rehearsing or memorising the steps, pupils become familiar with the strategy and this facilitates

self instruction as they will know what to do next when using the strategy.

4.5.2.5 *Step 5: Pupil practice in controlled materials*

Materials for the pupils to use for practice should be very carefully selected with attention being given to vocabulary, interest level, length, print etc. The fundamental aspect of this step is repetition and practice.

4.5.2.6 *Step 6: Student practice in classroom materials*

When pupils are comfortable with a strategy, transfer to their text books and reading materials used in the classroom is made. Cues and prompts must be faded out gradually and pupils must be encouraged to apply the strategy flexibly to different situations. Deshler and Schumaker (1986:586), advocate three phases to facilitate generalisation.

Orientation phase: make pupils aware of the different contexts in which the strategy can be implemented.

Activation: provide pupils with extensive opportunities to practice using a variety of materials, situations and settings.

Maintenance: regular enquiries are made to check whether pupils are in fact continuing to use the strategies.

From their research into reading comprehension, Brown, Palincsar and Armbruster (in press) as cited by Palincsar and Brown (1984:120), six common functions were found. On the basis of these functions, four strategies (summarising, questioning, clarifying and predicting), were developed by the researchers. Not only did they incorporate the six functions but they also fostered and monitored comprehension.

4.5.3 Questioning, predicting, summarising and clarifying

Brown, Palincsar and Armbruster (Palincsar and Brown 1984:120), found that the purposes of reading (explicit and implicit) must be understood. Relevant background knowledge must be activated and attention must be allocated so that relevant information is concentrated upon as opposed to the irrelevant. Critical evaluation is required for internal coherence and agreement with prior knowledge and common sense. Comprehension must be monitored through evaluation and self-questioning and inferences including interpretations, predictions and conclusions must be made and assessed. Strategies will be graphically represented throughout this chapter as a visual representation to facilitate recall.

Asking Questions	Predicting	Summarising	Clarifying
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Figure 20

Pupils were taught to predict what will happen in the passage to be read, formulate questions about the content to be read, summarise the content and seek clarification when difficulties occur using reciprocal teaching (cf 4.4.4), (Palincsar and Brown 1984:120-122). These strategies will be described including preparatory activities for each.

4.5.3.1 *Asking questions*

This serves to focus attention, guide thinking and provides the teacher with the opportunity to serve as a model for pupils to ask their own questions.

The following must be included:

- higher order questions
- self monitoring questions
- questions that relate text to prior knowledge

Preparatory activities for questioning

- pupils must formulate information-seeking questions
- discuss the importance of questioning
- review question words
- questions originating from the text:
 - brief, clear sentence with question word provided
 - brief, clear sentence with question word phased out
 - provided with a short segment of text, pupils choose main idea question
 - provided with a short segment of text, pupils formulate a main idea question (Maria 1990:183,184).

4.5.3.2 *Predicting*

Making predictions of what will take place or happen next, encourages pupils to set their own purposes for reading as they then seek to confirm their predictions.

Preparatory activities for predicting

- utilise background knowledge relating to predicting
- predicting from the title/subtitles
- use headings to predict (for example, using the following information, (scrum, lineout and try), suggest a title.

Title: (A Rugby Game)

scrum

lineout

try

- use text questions as predictors
- learn to set own purposes for reading
- ask questions and make predictions

- justify predictions with evidence from:
the text and/or
own experience and/or
knowledge about language and structure
- confirm or reject predictions after further reading
- relate text to own experiences (Maria 1990:185).

It is important to note that in order to make good predictions, readers must fit the information so that the significance of each piece is considered in relation to:

- their own background knowledge
- information in the text and
- the situation in which the text is read.

4.5.3.3 *Summarising*

With summarisation, we are involved with selection and reduction. Important ideas in the text are selected and the main ideas are condensed to make a summary in brief thus reduction.

Preparatory activities for summarisation

- summaries of favourite TV shows/movies/stories
- discuss the importance of summarising

- *Summary rules:*

identify topic sentences

invent one if there isn't one

leave out unimportant information

delete redundant information

collapse lists - give a general term for specific items

give steps/lists a general title

paraphrase - use own words (Maria 1990:184,185)

4.5.3.4 *Clarifying*

Difficulties with words, sentences, and the relationship between sentences are dealt with by clarifying. It may not be necessary to

clarify after reading each passage, but only when difficulties occur.

Preparatory activities for clarifying

- discuss why pupils do not understand what they are reading
- explain unclear referents e.g. they/themselves
- explain difficult or unfamiliar vocabulary
- concepts
- imagery
- encourage the use of contextual clues to discover word meanings (Maria 1990:185,186).

In using the think aloud method (cf. 4.4.3), Davey (1983:45), proposes the use of some specific strategies, namely predicting (cf. 4.5.3.2), visualisation and fix-ups. Fix-up strategies form part of comprehension monitoring. Other specialist strategies such as, visualising when a descriptive passage is read, predicting, questioning and paraphrasing to name a few, are practically implemented to promote reading comprehension.

4.5.4 Specific strategies

Whitehead (1986:62), cites the research findings of Clark, Deshler, Schumaker, Alley and Warner (1984), that the reading comprehension of learning disabled readers increased by 30% when they were stimulated to visualise, using their own RIDER strategy. This strategy is described further on.

4.5.4.1 *Imaging/Visualising*

(Clark et al. (1984), cited by Whitehead (1986:61)).

Imaging or visualisation whereby readers are encouraged to imagine or make pictures in their head of what they are reading, is

advocated as attention diverts from the level of print to that of discourse. Whitehead (1986:62) continues by saying that

"imaging provides a representation that allows readers to manipulate characters within episodes. It is also a rehearsal strategy that encourages deeper semantic processing."

Imaging or visualisation is a strategy that can be fostered from a very early age by encouraging young readers to imagine through pictures what is being read to them.

The RIDER (read, image, describe, evaluate, repeat) strategy of Clark et al. (1984), cited by Whitehead (1986:61), provides readers with an organised structure for visualising. This strategy comprises five steps whereby readers must read, form and describe the picture, evaluate the image and then repeat the procedure.

R I D E R

Read: first sentence, paragraph, episode, complete text.

Image

Describe your image

Evaluate your image for its completeness by checking against text (i.e. skim read)

Repeat

Metacognitive activities require that readers monitor their comprehension by evaluating their level of and regulating it. By fixing-up (cf. 2.2.2.1 (c)), readers are regulating their comprehension (cf. 2.3.3.1 (d)). Several comprehension monitoring strategies are described as follows.

4.5.4.2 *Comprehension monitoring*

When the reader realises that he/she is not understanding what is being read, the he/she needs to 'fix-up'.

(a) *Fix-ups*

In order to evaluate the question that needs to be asked is "WHY don't I understand?"

"Was I paying attention? Was I concentrating?"

The situation then needs to be regulated by using a fix up. This could be to pay attention and concentrate. However, the reason may not have been attention and concentration yet understanding is not taking place. Fix up by rereading, reading on and making use of contextual clues to provide the missing information. It may be a word that is causing the problem. The reader must ascertain whether it is the recognition of the word or the meaning of the word that is the problem. To fix up the reading of the word word attack skills in the form of analysis and synthesis and syllabification. To fix up by finding the meaning of the word the reader must read on for contextual clues or consult reference material eg. dictionary.

(b) *Questions I can ask as I read*

In order to foster comprehension monitoring, Bergman (1992:599) advocates that pupils should be encouraged to ask questions as they read. Questioning helps pupils remain focussed on relevant information. Each pupil is given a worksheet with questions as a continuous reminder. They can place it somewhere handy while they read for easy reference and a big chart can also be displayed in the classroom. The questions are as follows:

- *To get the gist*
 What is the story about?
 What is the problem?
 What is the solution?
 What makes me think so?
- *To predict-verify-decide*
 What's going to happen next?
 Is my prediction still good?
 Do I need to change my prediction?
 What makes me think so?
- *To visualize-verify-decide*
 What does this (person, place, thing) look like?
 Is the picture in my mind still good?
 Do I need to change my picture?
 What makes me think so?
- *To summarize*
 What's happened so far?
 What makes me think so?
- *To think aloud*
 What am I thinking?
 Why?
- *To solve problems or help when I don't understand*
 Shall I
 Guess?
 Ignore and read on?
 Re-read or look back?
 Why?

(c) *Comprehension monitoring strategy*, (Schmitt & Baumann 1986:28-31).

This strategy was formulated to assist teachers to incorporate

comprehension monitoring strategies into the guided reading phase of basal reader instruction. Basal reading instruction does not include metacognitive activities (cf. 3.5.3.2). It consists of three phases, prereading, guided reading during reading and postreading and pupils are taught to activate prior knowledge, question, predict, set purposes for reading and summarise what has been read. While initially the teacher guides the activities, the aim is for pupils to eventually take full responsibility.

The specific activities of each phase are tabulated.

Prereading activities

- activate background knowledge
- make predictions about the content
- set purposes/goals for reading
- generate questions

Guided reading activities

- summarise at various points
- evaluate and make new predictions
- relate new information to prior knowledge
- generate questions - self questioning

Postreading activities

- summarise total selection - main points only
- evaluate predictions
- return to the purpose set for reading
- generate questions for the total selection- this provides valuable information regarding the overall comprehension.

Comprehension is also monitored through the use of questioning strategies. Questions also feature prominently in teachers' assessments and instruction. Difficulties may be experienced because pupils do not know how to ask and/or answer questions

(Rhodes and Dudley-Marling 1988:205).

4.5.4.3 *Questioning strategies*

In order to teach pupils to manage the types of comprehension (literal, interpretive and critical) the Question-Answer Relationships (Q A Rs), (McNeil 1987:99, Raphael 1986, cited by Ezell, Kohler, Jarzynka and Strain 1992:206) strategy is advocated.

(a) *Question-answer relationships (Q A Rs)*

The aim of question-answer relationship instruction is to teach pupils to locate information, make decisions regarding text structures and their functions in communicating information and decide when to use inferential thinking. Not only must pupils answer questions but they can be encouraged to formulate their own using the four types of questions, summarised diagrammatically below: right there; think and search; author and you and on your own. (Ezell, Kohler, Jarzynka and Strain 1992:206, 207).

1.	<i>Where is the answer found? Right there</i> The answer is in the story. Easy to find. The words used to make the questions and the words that make the answers are Right There, in the same sentence.
2.	<i>Think and Search / Putting it Together</i> The answer is in the story, but a little more difficult to find. You would never find the words in the question and words in the answer in the same sentence, but would have to Think and Search for the answer.
3.	<i>Author and You</i> In order to arrive at the answer, inferential thinking is necessary as the answer is not explicitly stated.
4.	<i>On My Own</i> The answer also won't be told by words in the story. You must find the answer in your head. Pupils must use prior knowledge. Think "I have to answer this question On My Own, the story won't be much help."

Figure 21

An excellent method which offers the pupils the opportunity to experience the underlying processes required for inferencing is the, questioning strategy - teaching how to inference, (Hansen 1981, cited by Whitehead 1986:63).

(b) *Questioning strategy - teaching how to inference*

Inferences are dependent on prior knowledge so pupils lacking in prior knowledge or having difficulty in recalling the required information will need to be taught how to inference.

Discuss a question that taps the pupils' prior knowledge regarding a significant aspect or idea in the story to be read. Pupils write an

answer to this question on a strip of paper. The guesses about what the story characters might do in similar circumstances are discussed and these guesses are written on a strip of paper. The first four steps are repeated for as many questions as are needed to cover the key ideas. *Weave* the strips of paper together to emphasise the fact that readers can facilitate their comprehension if they weave information from prior knowledge into new text information.

Through self-questioning the attention of the reader is focussed on the all-important textual elements, thus the understanding thereof is facilitated (Nolan 1991:133). Wong and Jones (1982:228) confirmed this in their training of certain learning disabled pupils in self-questioning. The pupils' attention to textual elements increased as did their ability to develop questions. This resulted in an improvement in their comprehension.

(c) *A self-questioning strategy*

(Wong & Jones (1982) cited by Palincsar and Brown (1987:69)

Active learning is facilitated by the step by step sequence provided by the self-questioning strategy. Lengthy chapters should be divided into sections for this strategy to be effective. The ability to construct main ideas is a prerequisite for the implementation of self-questioning.

Ask, "Why am I reading this?"

Locate main ideas and highlight with a marker

Write down a question about each main idea

Think about an answer for each question

Read the passage or chapter

Re-examine the questions and compare the mental answers in the

passage just read.

Paraphrasing requires readers to monitor their understanding of what they are reading. As they read they take time at convenient intervals usually at the end of paragraphs or episodes, to take stock of what the text has been about.

4.5.4.4 *A Paraphrasing Strategy (R A P)*, (Schumaker, Denton & Deshler 1984:58).

Paraphrasing aims to assist pupils improve their ability to recall main ideas and specific facts using their own words. Readers are actively involved as they are compelled to review meanings and confirm these by skimming the text. For every paragraph read, pupils are required to do three things. They must read, ask what the main ideas and details are in the paragraph and then paraphrase by stating their answer in their own words. It can be used for class instruction and in groups. The reading material can be expository or narrative. The strategy is conducive to modelling. The first paragraph of the chapter can be read out loud and then the steps can be implemented so that the pupils can hear the teacher working through the strategy. The procedure can be repeated with the following paragraphs until the pupils are confident. Pupils can be encouraged to apply more and more of the strategy and internalise it. Once pupils are on their own, one could allow them to have some paper handy on which they can jot down answers to questions as they are reading or underline lightly that which is of importance. Pupils who have been taught this strategy to mastery through the acquisition and generalisation steps have substantially improved their reading comprehension scores.

A mnemonic device -RAP- which means rapping or talking to one's

self, is used to assist pupils to remember the steps that will result in the accurate implementation of the strategy. Readers are required to:

- find the main idea by asking questions
- identify at least two elements which refer to the main idea
- restate/paraphrase the content of the main idea and details using their own words.

The use of the following steps facilitates organisation and structure, so necessary for learning disabled pupils.

Step 1:

- Read a paragraph

Step 2:

- Ask questions to identify the main ideas and details in this paragraph. These simple questions provided the much needed structure for the pupils and set the stage for inferential and critical thought.

who? when? where? why? what? how?

Pupils must be encouraged to ask questions automatically and independently, as they won't always have somebody there to do it for them. Initially as a prompt, the researcher would lift a closed hand with the thumb sticking straight up and they would know to start with the who (the characters) and from there develop their questioning as each finger was raised! Self-questioning allows the responsibility to shift to the pupil.

Step 3:

- Put the main idea and details into your own words, that is paraphrase. The paraphrasing was particularly beneficial for summarisation skills taught later and it also facilitated pupils putting main ideas into their own words as opposed to reproducing the author's words. Although it takes a long time, it is worth pursuing, as without the ability to

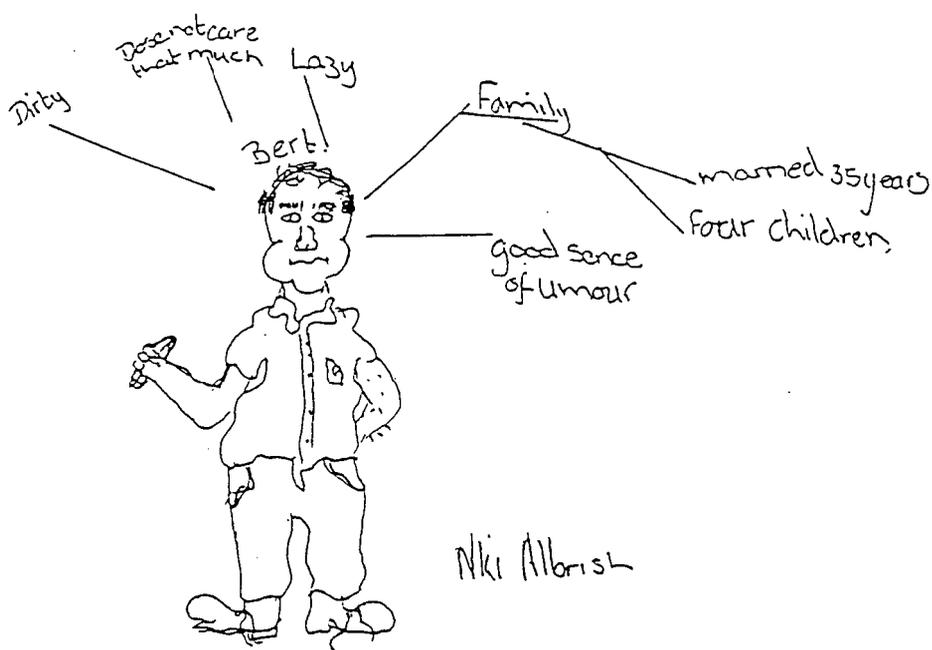
construct main ideas, pupils are lost in so far as strategy implementation is concerned.

4.5.4.5 *The identification of main ideas*

Main ideas proved to be problematic and required intensive instruction over a long time. The following successful strategies, pictorial representations, mind mapping, RAP and 'fill the balloon', were used to prepare the pupils for main idea construction.

(a) *Pictorial representations*

Prior to strategy instruction, pupils were introduced to the concept of main ideas through pictorial representations. Pupils were required to represent the main idea of the paragraph pictorially. This proved to facilitate the understanding of the concept of a main idea. An example of a pupil's work has been included to explain the concept.



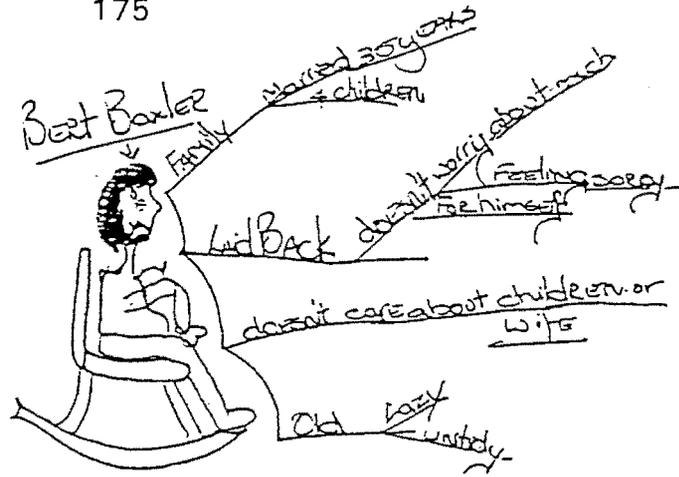


Figure 22

(b) Mind mapping

Pupils work in pairs or groups. They are provided with large sheets of paper and coloured pens. Together they read and visually represent the text's main idea relationships. Pupils may also draw pictures. An opportunity for paraphrasing is provided when the mind maps are explained to the rest of the class. The mind map thus also serves as a summary. Annexure A provides the instructions on how to make a mind map. To illustrate the concept, an example of work is provided.

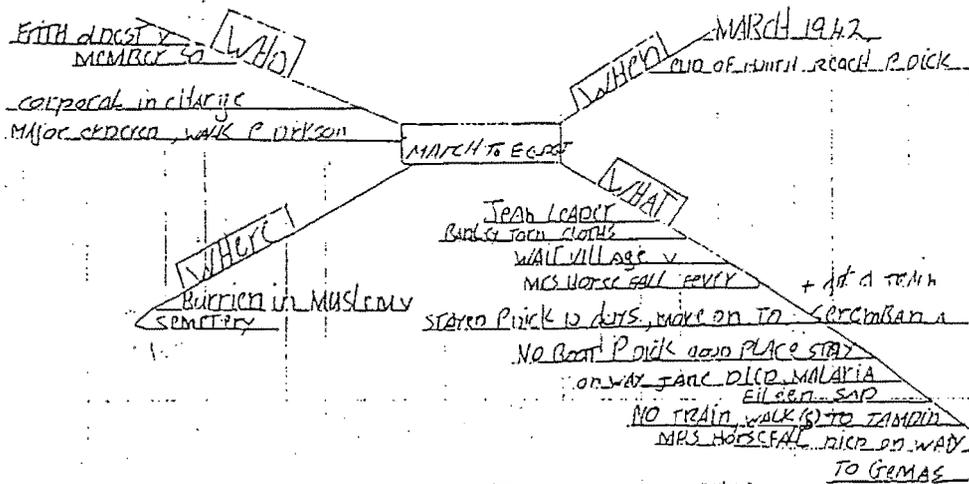


Figure 23

(c) R A P

A very simple strategy which was so effective for teaching main ideas was the R A P strategy (Schumaker, Denton & Deshler, 1984:58), (cf. 4.5.4.4). It was modified to suit the needs of the

group being taught as strategies should always be used flexibly.

(d) *'Fill the balloon'*

Another method which proved very popular and effective in explaining main ideas, was what the researcher called 'fill the balloon'. A section or a chapter would be read orally either by the researcher or volunteers, (after silent reading). Pupils would decide how many divisions would be needed and a blank piece of paper would be divided accordingly. The main idea was illustrated (stick figures could be used, fancy drawings were not necessary) and the information was then written into the balloons. The method is explained with an example of a pupil's work.



Figure 24

The following reading comprehension strategies were taught to the pupils using the reading methods previously described (cf. 4.4).

4.5.5 Reading comprehension strategies

4.5.5.1 *The Pre-Reading Plan (PREP)*, (Langer 1981:152-156).

This strategy was used because it is a pre-reading plan which is both diagnostic and instructional. It is diagnostic in that it gives teachers the opportunity to evaluate the levels of the pupils' prior knowledge. It is instructional because it gives the pupils the opportunity to recall their prior knowledge and assist them to assimilate new knowledge from others' ideas heard in the discussion. This technique can be used with both expository and narrative texts. It consists of three steps whereby pupils are initially associated with the concept, they reflect on the concepts and the knowledge is then reformulated.

Step 1. Initial association with the concept.

The teacher encourages a brainstorm to activate stored knowledge regarding the particular subject. Pupils can be asked more specific questions and possible answers can be modelled as cues for those who do not respond to the general questioning. This is also an excellent time to incorporate the new vocabulary. Keep the discussion focussed on the topic and be aware of the important aspects necessary for the comprehension of the text. Questions about these aspects must be planned in case they are not mentioned in the brainstorming. The results of the brainstorm can be schematically presented on the board in the form of a mind map for time to reflect.

Step 2. Reflect on initial associations.

When the initial reflections are completed, questions can be generated to find the reasons for the given thoughts: "What made you think of.....?"

Step 3. Reformulation of knowledge.

After Step 2, pupils can be asked whether they have gained any new information about the topic under discussion: "Based on our discussion, do you have any new ideas about.....?" This information can be recorded by using the strategy sheet of the K-W-L technique.

4.5.5.2 *The Know, Want to Know, Learn Strategy (K-W-L),*
(Ogle 1989:208-221).

This strategy aims to teach pupils to use expository material. According to Ogle (1989:205), lifelong reading habits which can open the world of non-fiction material of the pupil's own interest, can be fostered from teaching pupils to deal with expository reading material. K-W-L is suitable for class teaching, it can be used with the prescribed textbooks and resource materials and all pupils are involved, so even the passive learners have to accept responsibility. It is a flexible strategy which can tolerate poorly structured texts and it is conducive to modelling. There are three stages, and involves pupils in activities before reading, during reading and after reading.

K-W-L is categorised by Flood and Lapp (1990:494), as an information processing practice. It encourages independence as it is up to the reader to set goals, search and discover meaning hence encouraging active participation. During the first stage, the opportunity for background knowledge to be activated, revised and fostered is offered, thus the significance of prior knowledge is emphasised.

K-W-L Technique (Ogle 1989:208-221)

K what I know	W what I want to find out	L what I Learned
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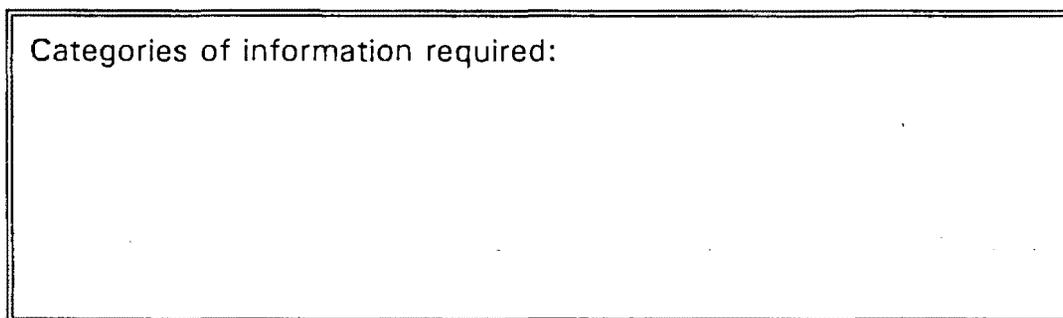


Figure 25

K: What I know.

Pupils brainstorm and write down all they know about the subject.

W: What I want to find out.

Expectations of what is to be learnt about the subject can be written down. This helps to establish aims and objectives and allows pupils to become focussed in on the task.

L: What I learned.

This can be completed after the lesson and a summary compiled about what has been learned from reading can be made.

4.5.5.3 *A Reading Comprehension Strategy: Prepare, Structure, Read and Think (PSRT) (Simons, 1989:419-427).*

This strategy can be used with expository reading material and it stimulates teacher-pupil interaction and reader-text interaction. Readers are required to recall prior information, integrate it with incoming information and use a graphic overview (a visual representation of the textual organisation), as they read. The aim of the PSRT strategy is to assist pupils in subjects requiring them to learn from expository textbooks. PSRT is for use both before and after reading. There is a high level of teacher-pupil interaction and it encourages pupils to be active readers, making and testing hypotheses about the reading material.

It consists of four steps and can be used before and after reading. During step 1, the teacher needs to find out what the pupils already know, step 2 involves assisting pupils to see how the text is organised. Reading takes place in step 3 and this is followed by a discussion in step 4. The interactive nature of this strategy encourages pupils to become active independent readers. The strategy is tabulated in detail to facilitate the teaching thereof.

Prepare	Structure	Read	Think
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Figure 26

Step 1: Find out what the pupils already know

- identify key concepts in the text. "What do you know about...?" "What comes to mind when you think of...?"
- use brainstorming to find out what pupils already know about key concepts - write responses on the board (an ideal opportunity to use mind maps).
- provide the necessary background information.

Step 2: Assist pupils to see how the text is structured

- prepare a graphic overview of the text - semantic mapping (main ideas/topics, supporting ideas etc), overviews can be categorised as:
 - those reflecting the organisational pattern of the text
 - those which impose an organisational framework upon it.
- distribute a blank overview to pupils.
- draw a blank overview on the board/overhead projector (prepare prior to instruction) and assist pupils with the partial completion thereof using information gathered in Step 1.

Step 3: Pupils must read the text

- set a goal or reading.
- pupils must read the text independently.
- pupils must complete the overview.

Step 4: Discuss the text

- ask specific pupils to complete the overview on the blackboard.
- pupils must summarise the text.
- question about the text in a thought provoking manner which will require the pupils to draw conclusions, apply information to new situations, analyse, synthesise, evaluate and solve problems.

4.5.5.4 A comprehension strategy (Wilson 1983:385-389).

Pupils must be made aware that comprehension takes place as readers read, so the point of departure for this strategy is that comprehension can be increased before, during and after reading. Many sources of information are necessary to link new information to existing knowledge in order for meaning to result and pupils can be made aware of this during the reading stages. This strategy points out that there are teacher and pupil responsibilities in reading comprehension and shows how pupils can be led to accepting responsibility for comprehension. The significance of reading appropriate reading material is also highlighted.

Before reading

Factors such as difficulty level, background concepts, understanding the purpose of reading and adequate preparation for reading are of significance.

Step 1. Placement in appropriate materials:

This first step in reading comprehension instruction is *critical*. The reading selection must be at the correct difficulty level where the reading material can, for the most part be comprehended with a few difficult areas. When the content is too difficult, readers are unable to utilise their prior knowledge as an aid to comprehend difficult parts.

Step 2. Appropriate background knowledge:

Somehow readers must be taught to take over the responsibility for comprehending. Teachers must make the pupils *aware of and why* background knowledge is being activated.

"I am trying to make you think of things you already know about this story."

"I do this so that you can use what you already know to help you understand the story."

Background concepts must be relevant as without them readers cannot comprehend and therefore the time spent activating background knowledge is also critical. *Most reading instruction should take place before reading.* Advance organisers can be effectively used as well as the survey procedure.

Ensure that the pupils understand that the purpose of reading is to gain meaning and that their prior knowledge can assist in the attainment of this goal

Sufficient stage setting, vocabulary and decoding assistance, permits the readers to concentrate on the meaning.

During reading

Both teacher and pupils have responsibilities during reading.

The teachers' responsibility

Effective instruction during reading is dependent upon the

teachers' ability to identify areas of difficulty and to teach the pupils how to solve them. Difficulties include: decoding, vocabulary, syntax, cohesion and passage structure.

Getting pupils to take responsibility

The teachers' responsibility is not over until each pupil takes responsibility for comprehension:

- teach readers to monitor their reading. Pupils must ask themselves: "does this make sense?"
- teach readers to identify problems; "why don't I understand?"
 - "is it a word (vocab) that I don't know?"
 - "is it the sentence (grammar) that I don't understand?"
 - "how does this sentence (cohesion) fit in?"
 - "what kind of story is this (passage structure)?"

A reader who can recognise problem areas can adapt a problem-solving strategy. If the problem is with decoding the reader must read to the end of the sentence to see if the context can give clues, try to analyse and synthesise the word, read further and if this does not help - ask for assistance.

If the problem is one of sentence comprehension, readers should reread the difficult sentence, try to rephrase it, use a sentence sorting procedure or read ahead. If still confused, ask for help.

Special attention for the weak group includes analysing the text into small units for comprehension. Facilitate "stage setting" with vocabulary and decoding in order to be able to focus on meaning and discourage round robin reading where the focus is on correct word recognition and the readers' objective is to get to the full stop as quickly as possible. Reading is more than pronouncing words correctly so where there are decoding problems, shorten the text and/or choose easier reading material.

The middle group requires step by step guided reading procedures but questions must be chosen carefully and wrong answers should be followed by carefully modelling the correct answer.

In so far as the top group is concerned, minimal instruction during reading is necessary. Provide guided reading worksheets which ask a few well chosen questions. Questions must focus on problem areas or story composition.

After reading

- summarise the entire text
- relate to other information or to other texts
- make comparisons of stories and characters
- pupils can write their own stories

It must be noted that if readers cannot summarise what they have read, the reading has not achieved its objective. After reading it is important not to ask a series of literal level questions. Basic comprehension should be taken care of during reading.

Readers must realise that the real pay-off in reading is to take information and explore it to see where it fits in with what they already know whether it agrees or disagrees with what they believe.

As there is so much that has to be read in the secondary school situation it is absolutely imperative that the teaching of reading continues. It must not be an isolated subject but totally incorporated into the curriculum.

4.5.6 A strategy for incorporating reading comprehension instruction into all subjects in the curriculum.

An additional reason for reading comprehension to be incorporated

into the curriculum is the fact that in their description of the instructional implications to improve the teaching of learning disabled secondary school pupils, Snider and Tarver (1987:356), warn curriculum developers and teachers not to presume that pupils have the required schemata or preskills to benefit from conventional instruction in comprehension. Instruction must emphasise vocabulary and prior knowledge in order to provide a frame of reference for their subject content. The following strategy has been especially designed by the researcher so that reading comprehension is part and parcel of subject content teaching. It is *based on the following strategies*: Pre-Reading Plan (PREP) (cf. 4.5.5.1); The Know, Want to Know, Learn Strategy (K-W-L) (cf. 4.5.5.2); The Comprehension Strategy (cf. 4.5.5.4); A Reading Comprehension Strategy: Prepare, Structure, Read and Think (PSRT) (cf. 4.5.5.3); A Comprehension Monitoring Strategy (cf. 4.5.4.2 (c)) and a Paraphrasing Strategy (RAP) (cf. 4.5.4.4).

Lessons should be divided into *three phases*:

pre-reading	during reading	after reading
-------------	----------------	---------------

Figure 27

Pre-reading phase

Of extreme importance is the fact that most reading instruction should take place prior to reading, as pupils need to be prepared to encounter the textual information. Pupils must also fully understand that the purpose of reading is to gain meaning and that their prior knowledge can facilitate the accomplishment of this goal. Being aware of and knowing the reasons for activating background knowledge helps to teach the pupils to take responsibility for extracting meaning from the text.

- survey the reading material taking note of the text structure: title, subtitles, print, textual organisation, textual features, graphics
- from the title and subheadings, make a prediction of what the text is about (this also facilitates focussing attention)
- activate prior knowledge by brainstorming what is known about the subject
- record this on the board and then categorise the known information in the form of a mind map, semantic map or graphic organiser. K-W-L sheets (cf. 4.5.5.2) may also be used
- vocabulary preview, discuss words which may prove difficult for reading and meaning
- set aims (long-term) and objectives (short-term)
- encourage self questioning
questions can be set to help focus attention as the pupils will need to look for the answers
- allow the pupils to read the passage *silently*

During reading

During reading pupils need to be guided in their learning of the subject content. Certain hints which emerged from the teaching experience are also included.

- reading material should not be too difficult
- initially read a short passage at a time
- purposefully reread orally, *never* force a pupil to read and do not use round robin reading, call for volunteers or read to the pupils as a modeling opportunity
- continue to refer to, draw on and use prior knowledge
- deal with difficult vocabulary as it occurs
- at the end of the passage:
 - check predictions, if they are incorrect, pupils must

be encouraged to verbalise the reasons and their proposed changes to accommodate the information
 if questions were set, have they been answered?
 ask and answer questions to elicit the main ideas
 paraphrase

- encourage pupils to monitor their comprehension (does this make sense?, am I understanding?)
- apply fix-ups (cf. 4.5.4.2 (a))

After reading

After reading provides the opportunity to increase knowledge content gained from reading

- summarise the information read (the paraphrasing greatly facilitates this final summarisation)
- ask inferential and critical questions
 (questions after reading should not be on a literal level, as these were used to elicit important information during reading)
- final check of predictions
- have the set aims and objectives been achieved?
- refer to the original mind map or graphic representation and make comparisons
- encourage generalisation and transfer by relating to other texts or events
- use mind maps for pupils to record the information, this allows the pupils to make the information their own and is a great tester of whether reading for meaning has taken place.

Pupils need strategies to assist them to internalise subject content for study purposes.

4.5.7 Study strategies

Study strategies (cf. 2.2.2.1 (c)), are used when reading to learn work for tests and examinations. The following strategies proved invaluable. Survey, Question, Read, Recite and Review (SQ3R), (Cheek and Cheek (1983); Wallace and Kauffman (1986), cited by Hoover (1989:453)); Preview, Question, Read, Reflect, Recite, Review (PQ4R), (Cheek & Cheek (1983); cited by Hoover (1989:453)) and Preview, Ask Questions, Read, Summarise (PARS), (Cheek and Cheek (1983), cited by Hoover (1989:453). A significant fact is that not all strategies suit all pupils with learning disabilities. Strategy selection will be governed by the pupil's individual needs and abilities.

4.5.7.1 *Survey, question, read, recite and review (SQ3R).*

According to Cheek and Cheek (1983:177), Wallace and Kauffman (1986), as cited by Hoover (1989:453), SQ3R is the "oldest and most commonly used study strategy". This gives sufficient proof of its effectiveness. There are five steps, the first of which is a *survey*. The purpose of the survey step is to gain an holistic perspective by taking cognisance of its features such as headings, print and graphic aids to name a few. *Questions* about the passage facilitate the formulation of the purpose for reading it. The passage can then be *read* purposefully with attention being given to the specific questions set. During the *recite* stage, these questions can be answered but the pupils should be encouraged not to directly refer to the reading material. The final stage is one where pupils *review* the passage and any additional notes to confirm their answers.

Survey	Question	Read	Recite	Review
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Figure 28

Survey

- Skim through the work quickly taking note of:
 - introductory statement
 - headings
 - subheadings
 - print
 - bold
 - italics
 - summaries
 - graphic aids
 - sketches
 - illustrations
 - pictures

Question

Direct questions about the headings and subheadings in an effort to identify the purpose for reading it.

This enables pupils to:

- think purposefully
- show an interest
- concentrate
- be actively involved and
- ask questions: who? what? where? when? why? how?

Verbalise questions aloud or write them down.

Read

- Read the material with understanding
- Attend specifically to the questions generated under Q

- Look for key words
- Pupils must be encouraged to remember what they have already read and to see the connection between what they are presently reading and what is to come
- Reading should be *silent*

Recite

Pupils attempt to answer the questions without direct reference to the reading material.

- Paraphrase (own words) by making sentences with the key words.
- when pupils are using this as a learning strategy, brainstorming can be effectively used here and this is where the mind maps are invaluable.

Review

Pupils must recapture the whole by reviewing the material and any notes compiled during reading to confirm the answers.

- say key words aloud in their own sentences without using the book.
- as a learning strategy, mind maps can be used to review as they are effective for summaries.
- use key words, clockwise, around the focal point.
- let them pretend they are explaining the work to someone else and emphasise the key words.

Reviewing must be regularly done.

4.5.7.2 *Preview, question, read, reflect, recite, review (PQ4R),* (Cheek & Cheek (1983); cited by Hoover (1989:453)).

PQ4R is derived from SQ3R and aims to help pupils become more discerning and organised readers. This is evident in the addition of the *reflect* stage to the SQ3R stages. Pupils reflect by rereading any information which was not initially understood. As pupils

search for answers to the questions, thought organisation is promoted.

Preview	Question	Read	Reflect	Recite	Review
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Figure 29

- preview the material
- formulate questions
- read the material
- recite as described in the SQ3R method
- review as described in SQ3R
- reflect reread any information which is not understood.

Organise thoughts by answering questions.

4.5.7.3 *Preview, ask questions, read, summarise - PARS* (Cheek & Cheek (1983) cited by Hoover 1989:453).

The PARS method (Cheek & Cheek (1983) cited by Hoover 1989:453) is an abridged strategy. Hoover (1989:453), advocates it for use with younger pupils and those with less experience in the use of strategies.

As a preview, a purpose must be set. Questions are asked in relation to the areas which the teacher wishes to highlight. The passage is read with the questions in mind and pupils try to find the answers as they read. Finally the passage is summarised and the information read is related to the questions asked and then confirmed.

Preview	Ask questions	Read	Summarise
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Figure 30

- preview the material
- formulate questions according to areas requiring attention
- read bearing the set questions in mind in order to answer them.
- summarise the material and confirm the information gathered in relation to the questions asked.

To merely have well written text books will not suffice to facilitate the pupils understanding thereof. Pupils will need to be instructed in strategies to cope with text books.

4.5.8 Strategies facilitating the use of text books

Four strategies which assist pupils to cope with text books are the Prepare, Structure, Read, Think (PSRT), (Simons 1989:419-427), the Information Text Reading Activity (ITRA), (Moorman and Blanton 1990:174-181), and the Multipass Comprehension Strategy, (Schumaker, Deshler, Alley, Warner and Denton 1984:295-304).

4.5.8.1 *Prepare, structure, read, think (PSRT), (Simons 1989:419-427)*

PSRT can be used both before and after reading. There is a high level of teacher-pupil interaction and it encourages pupils to be active readers, making and testing hypotheses about the reading material. The aim of this strategy is assist pupils in subjects requiring them to learn from expository textbooks.

Prepare	Structure	Read	Think
---------	-----------	------	-------

Figure 31

Step 1

find out what the pupils already know

- identify key concepts in the text. "What do you know about...?" "What comes to mind when you think of...?"
- use brainstorming to find out what pupils already know about key concepts - write responses on the board (an ideal opportunity to use mind maps).
- provide the necessary background information.

Step 2

assist pupils to see how the text is structured

- prepare a graphic overview of the text - semantic mapping (main ideas/topics, supporting ideas etc)

overviews can be categorised as:

those reflecting the organisational pattern of the text

those which impose an organisational framework upon it.

distribute a blank overview to pupils.

draw a blank overview on the board/overhead projector (prepare prior to instruction) and assist pupils with the partial completion thereof using information gathered in Step 1.

Step 3

pupils must read the text

- set a goal for reading.
- pupils must read the text independently.
- pupils must complete the overview.

Step 4

discuss the text

- ask specific pupils to complete the overview on the blackboard.
- pupils must summarise the text.
- question about the text in a thought provoking

manner which will require the pupils to draw conclusions, apply information to new situations, analyse, synthesise, evaluate and solve problems.

4.5.8.2 *The information text reading activity (ITRA), (Moorman and Blanton 1990:174-181)*

The aim of the information text reading activity, ITRA, is to involve the pupils in meaningful learning so that they can become independent learners who plan, monitor and evaluate their reading. It consists of three instructional phases, prereading, reading and postreading. Reading instruction is based on the cognitive processes required for learning. In the prereading phase, pupils are expected to plan using the cognitive processes of activating and focussing. During reading, pupils monitor through the cognitive processes of selecting and organising. Postreading activities offer the opportunity to evaluate with integration being the cognitive process. This can be summarised graphically in the following conceptual framework for the ITRA.

Independent Student	plan	monitor	evaluate
Instructional Phase	preread	reading	postread
Cognitive Processing	activate and focus	select and organise	integrate

Figure 32

The activities in the three phases are more fully described.

The prereading phase

In this phase the teacher must build a bridge between what pupils already know and what they are expected to learn.

- activate or develop background knowledge
- activate or provide knowledge of text structure:
type of text - expository, narrative, information
overall text design - headings, subdivisions, summaries
text patterns - simple listing, cause-effect, compare-contrast, time order, and problem solution.
- introduce key vocabulary - this provides pupils with the semantic labels for the concepts to be learned
- establish a purpose for reading - purpose setting directs and monitors reading, helps overcome poor text structure and represents a standard for evaluation upon completing the reading assignment, provides an opportunity for a transition to independence.

Reading phase

Assistance during reading should be aimed at:

- maintaining the purpose
- organising the information
- building internal relationships among information presented in the text

Reading material must always be at the pupils' instructional reading level

- provide the necessary prior instruction for the successful completion of the reading phase activities
- discuss instructional activities and their purposes with the pupils.

Postreading phase

- discuss the assigned purpose for reading - this must be done immediately in order to assist the evaluation of the pupil's own performance in relation to the purpose
- assist with the organisation of the information gained in the text - pupils must see that facts are related not dissociated
- assist with the evaluation and reflection on pupils' learning

- assist pupils with the integration of knowledge gained from the text with what they already know
- provide pupils with the opportunity for the practical implementation of their new knowledge in the real world

Activities for concluding the lesson must always be in line with the purpose for reading and during reading activities. Pupils must do something with the information they have acquired.

4.5.8.3 *Multipass comprehension strategy, (Schumaker, Deshler, Alley, Warner and Denton 1984:295-304)*

The multipass comprehension strategy has three phases and involves modelling, verbal rehearsal practice, feedback and testing at various points. The three phases focus the pupil's attention on the material for a specific purpose. The step by step procedure teaches pupils to respond to various elements of the text structure and is especially advantageous for pupils experiencing difficulties with subject content.

Survey pass

The aim of this first phase is to gain information regarding the chapter as a whole. Pupils are encouraged to look at the chapter title, illustrations and captions, major subtitles and summaries etc. in order to familiarise themselves with the organisation of the chapter. Paraphrasing this information leads to a beginning level of comprehension.

Size-up pass

Pupils skim or scan for information in this phase in order to gain as much information without reading word for word. If there are questions at the end of the chapter, use them and also use cues such as, italics, colours and bold print, as a base for questions, for example, if the word ecosystems is in bold print, the pupil may ask

"what does ecosystem mean?" or "how is ecosystem related to the environment?" The pupil skims the section around the word and paraphrases an answer.

Sort-out pass

In this final phase of the multipass strategy pupils can evaluate their own knowledge of the material. Questions at the end of the chapter or study guide are answered. Tick questions immediately answered, put a dot where unsure, and then skim the passage for the answer until it too can be ticked.

4.6 SYNOPSIS

The aim is to assist learning disabled secondary pupils to become independent readers who can successfully comprehend what they have read. In this way they will be able to cope with the voluminous amount of reading material with which they are expected to cope in the secondary school. In order to do this pupils have been instructed in reading comprehension and strategy implementation. Instruction has centred on facilitating cognitive processing in order that pupils can attend, focus, set purposes, plan, select and organise, monitor, evaluate and remember. Teachers have activated prior knowledge and encouraged pupils to relate new information with the old and integrate it. Active interaction of the reader, the text and the context has required participation on the part of the pupils. Attention has been paid to word recognition and language structures to facilitate the pupil's processing of textual information and vocabulary extension. Teaching and learning experiences have aimed at the achievement of success so that pupils can be motivated to use strategies. In fostering independence, teachers have aimed at generalisation and transfer so that pupils can apply strategies to different situations. Diagrammatically this is recorded as follows:

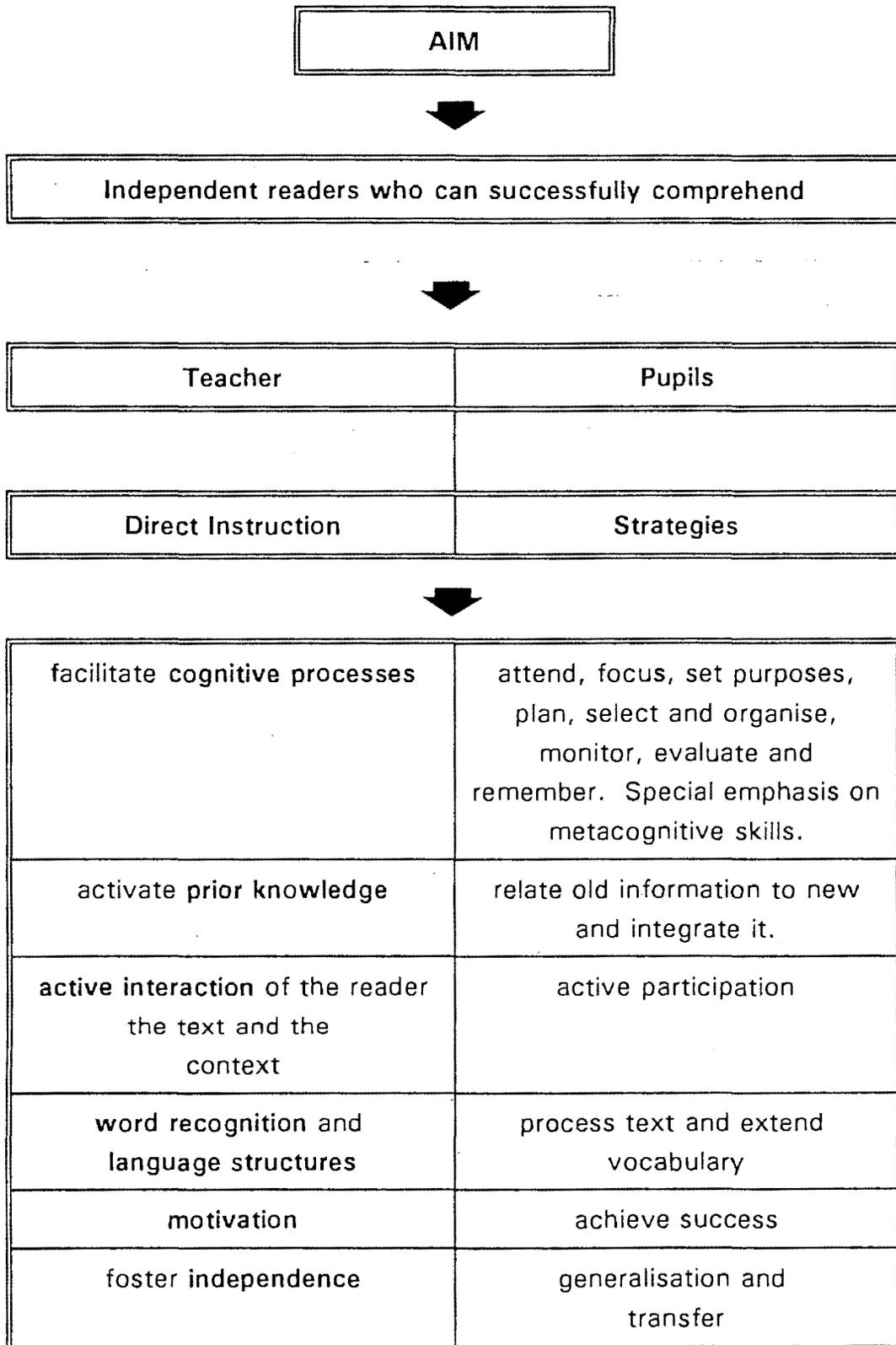


Figure 33

4.7 CONCLUSION

The consequences of poor reading skills in the secondary school have been spelt out in this dissertation. However, there is no doubt as to the difference that the teacher can make. Lamb and Arnold (1988:361), sum it up by saying:

"Reading is a lot like a dragon sitting on a pile of treasure; there are two ways to go. Read well and it is truly a treasure, the key to education, career, and abundant personal satisfaction. Read poorly and reading is fear, failure, and loss of personal esteem; in short, dragon's breath. As a teacher you will make the difference between treasure and dragon's breath for a child's lifetime."

What a responsibility, what a challenge! Teachers can make reading a treasure by insructing reading comprehension on an ongoing basis and incorporating strategic teaching into the curriculum.

In the following chapter, guidelines are provided for teachers to use in order to improve the reading comprehension of learning disabled secondary school pupils.

CHAPTER FIVE

GUIDELINES FOR THE IMPROVEMENT OF READING COMPREHENSION SKILLS

5.1 INTRODUCTION

It is evident from the information in previous chapters, that reading is no longer a case of finding meaning which is hidden in the text. Readers construct meaning and this requires active participation on the part of the learner especially in the implementation of the metacognitive skills of self-monitoring, predicting, hypothesising, self questioning and the intentional integration of new information with the old (cf. 2.2.2.1 (c)).

Optimal reading comprehension is dependent not only on readers' knowledge of many specific strategies, but also on their knowledge of when to use each strategy in their repertoire. Competent learners are able to devise plans of action or use strategies to allow them to gather information in a systematic fashion that reduces confusion and thereby increases their chances for success. Their metacognitive awareness is conducive to comprehension monitoring. However, it has been established that learning disabled pupils on the other hand, often approach complex

problems in a disorganised fashion and solve them with a great deal of effort, if at all, leading to them being called strategy-deficient, inactive learners.

Schewel and Waddell (1986:20) cite Torgesen's (1982) suggestion that

"...the major learning barrier for disabled students is that they have an inactive learning style and thus experience strategy deficits".

Torgesen (1982) as cited by Schewel and Waddell (1986:20), rejected the generally accepted idea that ability deficits were the primary cause of the learning disabled pupil's and emphasised their failure to interact in their learning processes. For Wong and Jones (1982) as cited by Schewel and Waddell (1986:20), the passivity of the learning disabled is the significant reason for their inability to apply metacognitive strategies to reading comprehension. The deficits in the learning processes (cf. 3.4), especially the lack of metacognitive skills (cf. 3.4.3.6), and problems with the executive functioning of the information processing (cf. 3.4.4), have been established. Language deficits (cf. 3.4.3.5), prior knowledge difficulties (cf. 3.5.1.2) and the pupils' affective, motivation and social state (cf. 3.5.1.5), also impede the ability to successfully comprehend what has been read.

5.1.1 Resume

For Lerner (1981:294), comprehension is the "heart of reading" and she maintains that:

"...the development of more advanced comprehension skills, an increase in reading rate and the achievement of a flexibility in reading for different purposes, are the responsibilities of the secondary schools." (Lerner 1988:291).

However, reading comprehension is not seen as the responsibility of secondary school teachers especially subject teachers. The general feeling is that if reading comprehension instruction is to be included in the curriculum, then it is the language teacher's responsibility. There is no time to spend on something which should have been taught properly in the primary school (cf. 2.3.3.2 (a)). When pupils come into the secondary school, they should have all the basic skills (cf. 2.3.3.2 (a)).

The researcher has spent almost three years teaching reading comprehension to secondary school learning disabled pupils. From the literature study and from the researcher's own experience, it is evident that provided learning disabled pupils are instructed in reading comprehension, they can read strategically with meaning.

5.2 READING COMPREHENSION INSTRUCTION

It has been ascertained through this research that in order for successful reading comprehension to take place, certain criteria need to be met (cf. 2.4). Reading must be fluent as a result of automatic word recognition, adequate functioning of the cognitive processes (cf. 2.2.2.1) and the construction of meaning through the active interaction of the reader, the text and the context, where prior knowledge and metacomprehension are used. Readers should be motivated, interested, able to use all types of comprehension and be goal directed. The requirements for

successful comprehension include metacognition, the ability to use strategies, making and controlling inferences using expectations, prior domain knowledge, beliefs, memory organisation and variable depth processing (cf. 2.3.6).

Reading instruction should be metacognitively based in that learning disabled pupils need to be taught to be aware of their own cognitive processes and be able to regulate them through planning and monitoring. They need to have a knowledge of themselves as a reader, the task to be fulfilled and the strategies required to perform the task. Pupils are taught the significance of being aware of their own strengths and weaknesses as this assists them in the choice of strategies required for the particular task. Tasks are analysed through self-questioning (what do I have to do? what do I need for the task? how must I do it?). Goals need to be set as these influence the choice of strategies. The significance of prior knowledge is taught so that the pupils can relate their new information to the old in order to construct meaning. The bulk of the program involves the teaching of strategies and the skills and processes for reading comprehension. Several methods from the literature were used to teach reading comprehension (cf. 4.4). The generalisation and transfer of strategy knowledge to different situations is also included.

From the practical application of different reading comprehension methods and strategies, the researcher found that learning disabled secondary school pupils can improve their reading comprehension if their needs are met by using the correct methods and strategies. The following guidelines have been formulated to assist teachers to foster reading comprehension in the learning disabled child. In addition, these guidelines having evolved from practical

experience, are advocated to prevent any time consuming trial and error exercises.

5.3 GUIDELINES FOR THE IMPROVEMENT OF READING COMPREHENSION SKILLS

Guidelines have been defined as directing principles or standards for the direction or arrangement of a course of events (cf. 1.2.7). The instruction of reading comprehension and strategy implementation (cf. 4.4; 4.5) was based on literature from the literature study.

The question as to whether reading comprehension is taught in schools is asked by Harris and Sipay (1985:489). However, the authors do not find it disconcerting that very little instruction in reading comprehension did in fact occur as they maintain:

"Until fairly recently, very little has been known about the reading comprehension process that could be translated into instructional practices."

5.3.1

**TEACHERS MUST HAVE A THOROUGH KNOWLEDGE OF
THE PROCESSES OF READING AND LEARNING
DISABILITIES**

Teachers need to know their subject, their pupils and his/her specific problems. It has been well established that reading comprehension does not develop automatically once a reader

can decode words (cf. 2.2.4.2). It has also been established that reading comprehension is not just answering literal questions at the end of a text (cf. 2.3.4). The reading process is a complex one and an indepth knowledge thereof is required so that teachers know what to teach their pupils and be able to substantiate what they are teaching (cf. 2.2.2.2). Whitehead (1986:67), adequately sums it up as follows:

"Teaching comprehending strategies means a new role for teachers. As fluent readers we must share our secrets, model our strategies, instruct and encourage our students."

Reading successfully calls for the integrated use of a variety of strategies and teachers need to know how these strategies work in the successful reader and how to foster and promote them in the unsuccessful readers. This will require an intensive knowledge of learning disabilities as teachers must know the individual strengths, abilities and weaknesses of the pupils in order to select and modify reading comprehension strategies accordingly. According to Gartland (1990:232), the instructional base should comprise pupils' reading strengths, weaknesses and needs. It is also important to know what motivates the pupils so that strategy use can be related to their motivation.

Idol-Maestas (1985:243), warns by saying that

"If teachers expect students to comprehend without offering direct instruction on how to comprehend, students with comprehension difficulties are likely to flounder."

The deficits of the learning disabled pupils (cf. 3.4) prevent them from automatically using strategies when they are reading. For this reason they must be taught directly to actively construct meaning from the text by integrating several sources of knowledge. These include the reader's purpose, prior knowledge, knowledge of the text regarding its language, content and structure as well as the author's purpose (Jacobowitz 1990:621).

5.3.2

READING COMPREHENSION MUST BE DIRECTLY INSTRUCTED
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The direct methods of instruction (cf. 4.4), allow the pupils to be exposed to the underlying processes needed to preview the reading material, activate background knowledge (self-questioning (cf. 4.5.4.3)), set purposes, check understanding (using paraphrasing (cf. 4.5.4.4), monitor comprehension (cf. 4.5.4.2), integrate old and new information, summarise (cf. 4.5.3.3), evaluate and generalise and transfer (cf. 4.5.1.6) to different situations (cf. 4.6).

The provision of a blueprint to learn can be done by using direct instructional methods which are followed by ample practice. All instruction should be well planned, proficiently implemented and thoroughly supported. The practical implementation of the strategies will require guidance from the teacher and pupils should be given ample opportunities to practice independently. Systematic corrective feedback regarding their task performance and a final evaluation of how they coped should be encouraged.

Pupils must also be informed as to why, how and when to use the particular strategy being taught, this is conditional knowledge. Pupils can be directly taught the additional crucial aspects of knowledge. Declarative knowledge (cf. 2.2.2.3 (e)), involves pupils being taught about strategies, the effect they have on their reading and their own particular capabilities. Procedural knowledge (cf. 2.2.2.3 (e)), concentrates on how to implement strategies, evaluate and regulate comprehension (Paris and Winograd 1990:32).

In order for strategies to be of significance they must be preceded by a great deal of groundwork on the part of the teacher.

5.3.3

**STRATEGY INSTRUCTION SHOULD FORM THE CORE OF EVERY
TEACHER'S METHOD OF TEACHING**

It should not be left to the teacher of the main language only, to teach strategically. A description of how reading comprehension instruction can be incorporated into the curriculum (cf. 4.5.5.4) is applicable to every subject. Pupils for whom strategy use is reinforced in every class attended can only benefit enormously. Strategic teaching as a core, irrespective of the subject, should also form part of the school's ethos. If strategies form the core of teaching, it will be easier to incorporate reading instruction into the curriculum.

Fix-up and study strategies are integral components of strategic teaching.

The researcher found that the pupils read every word and were not aware of when they were not understanding. If they were aware that they were not understanding, they did not know what to do about it, other than ask the teacher. It was pointed out to the pupils that no teacher would be able to accompany them throughout their lives in order to be there when they did not understand what they were reading. However the head on their shoulders would always be with them and so it was important for them to become *independent, strategic readers*.

Pupils were shown that as reading takes place it is important to ask one's self at intervals: "do I understand?" "Is this making sense?" If not, then fix-ups would have to take place. A mnemonic to facilitate memory was coined by the pupils: "if I don't click, I must 'fix up'".

Learning disabled pupils find it very difficult to prepare for tests and examinations. Apart from the fact that they have memory deficits (cf. 3.4.3.4), they lack the metacognitive skills (cf. 3.4.3.6), required for planning and organising their studying. Most pupils believed that their 'reading' over their work was learning. The study strategies described (cf. 4.5.7), provide the pupils with a structured, systematic approach to internalise the subject content. Pupils are actively involved in the learning act as opposed to passively sitting 'reading'. *Memory* is also facilitated in the study strategies as well as the paraphrasing (cf.4.5.4.4) and summarising (cf.4,5,3), strategies.

During their research, Anderson, Hiebert, Scott and Wilkinson (1985:73), noted that

"...the idea that reading instruction and subject matter instruction should be integrated is an old one in education, but there is little indication that such integration occurs often in practice".

Instruction in the use of strategies should be integrated and not treated as an addendum (Palincsar and Ransom 1988:787).

5.3.4

<p style="text-align: center;">INCORPORATE READING COMPREHENSION INSTRUCTION INTO ALL SUBJECTS IN THE CURRICULUM</p>

The significance of the statement by Palincsar and Ransom (1988:787), that "*strategy instruction should not assume the dimensions of an added course or even added content*" is strongly endorsed by the researcher. Secondary school pupils are dependent on reading in all their subjects, therefore reading comprehension instruction cannot be limited to language subjects. Pupils must be taught how to comprehend so that they can apply it over the broad spectrum. Reading comprehension instruction can be integrated in the curriculum and does not have to be treated as a separate entity.

Incorporating reading comprehension instruction means that one is combining reading comprehension instruction and the information being taught in the lesson. It means that the teacher does not rush through a lesson in order to have time afterwards to "teach reading" and if there is no time, the teaching of reading is not done. The lessons may take longer but in the long run time will be saved because they have been well taught, the learning material has been consolidated and it has been meaningful for the learners. A detailed description of the strategy formulated for this specific purpose is recommended in

the previous chapter (cf. 4.5.6).

In order to structure the situation for the pupils, strategies should be categorised.

5.3.5

STRATEGIES NEED TO BE CATEGORISED

The researcher found that categorising strategies facilitated the application thereof and prevented indiscriminate application of irrelevant strategies which were time consuming and confusing. Katsiyannis and Buckner (1992:356) suggest the following categories:

<p>Category 1 Basic skills strategies</p> <ul style="list-style-type: none"> * locating factual information * finding main ideas * sequencing * making inferences 	<p>Category 2 Metacognitive/learning strategies</p> <ul style="list-style-type: none"> * comprehension monitoring * self questioning * study skills
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Figure 34

Wade and Reynolds (1989:10), in their strategy definition sheet categorised strategies as 'observable' study methods (underlining, highlighting, copying, outlining drawing diagrams) and 'in-the-head' study methods (survey, read at usual rate, read slowly, make a picture in your head, pay special attention, to name a few). Dana (1989:34), proposed a core of reading comprehension strategy families which are categorised

according to preparation (cf. before reading activities 4.5.5), focussing (cf. before and during reading activities 4.5.5; 4.5.3.3; 4.5.4.1; 4.5.3.2)), repairs (cf. 4.5.4.2; 4.5.4.1; 4.5.4.4)) and memory (cf. 4.5.4.4; 4.5.6). These are summarised in the following diagram.

<p>Before reading: RAM as preparation for reading</p>	<p>Relax Activate your purpose Motivate yourself</p>
<p>During reading: SIP to focus on content</p> <p>RIPS to make repairs</p>	<p>Summarise natural sections Image - visualise content Predict what's coming</p> <p>Read further/read again Image - visualise content Paraphrase troublesome section Speed up/slow down/seek help</p>
<p>After reading: EEEZ to set your memory</p>	<p>Explain what it all means to you Explore other versions Expand with related material</p>
<p>RAM SIP</p>	<p>RIPS EEEZ</p>

Figure 35

The researcher categorized the strategies according to comprehension monitoring, specific strategies (questioning, predicting, clarifying, summarising, imaging/visualisation, paraphrasing), curriculum incorporation, study and strategies to facilitate working with textbooks. The categorisation is summarised as follows:

- comprehension monitoring (cf. 4.5.4.2)
- specific strategies
 - questioning (cf. 4.5.3.1; 4.5.4.3)
 - predicting (cf. 4.5.3.2)
 - clarifying (cf. 4.5.3.4)
 - summarising (cf. 4.5.3.4)
 - imaging/visualisation (cf. 4.5.4.2)
 - paraphrasing (cf. 4.5.4.4)
 - identification of main ideas (cf. 4.5.4.5)
- reading comprehension strategies (cf. 4.5.5)
- a strategy to incorporate reading comprehension into the curriculum (cf. 4.5.6)
- study strategies (cf. 4.5.7)
- strategies facilitating the use of text books (cf. 4.5.8)

5.3.6

**PUPILS NEED TO BE ADEQUATELY PREPARED FOR STRATEGY
INSTRUCTION**

Teachers cannot assume that basic concepts are common knowledge to these pupils. These basic concepts need to be taught in order to provide the foundation on which to build strategy instruction, hence the need for adequate preparation.

Within the first few steps of many of the strategies, main ideas feature prominently. This is where the first major stumbling block occurred. Puzzled looks and "what is a main idea?" follow. The lack of knowledge of this concept severely affected the implementation of strategies by the learning disabled pupils. Traditionally pupils have been led to believe that the main idea is inherent in the text waiting to be located. They now have to be

taught that they must integrate sources of knowledge (cf. 5.3) in order to construct main ideas. It is also advocated by Schmidt, Barry, Maxworthy and Huebsch (1989:432), that difficulties with main ideas could also be as result of the text being more complicated thus hampering the recognition of focal points. An inability to sustain attention, as with the learning disabled (cf. 3.4.3.1), will affect the reader's ability to find main ideas and monitor what is being read.

It is suggested that teachers start right at the beginning with explaining main ideas or central thoughts; distinguishing the relevant from the irrelevant and thereby separating and identifying main ideas from the supporting information; understanding cause and effect relationships; following a sequence of events and directions; noting textual organisation; understanding that there is a purpose for reading and the purpose of the reading task will determine the rate of reading (skim, scan, read for detail); how to remember what has been read (cf. 4.3).

As main ideas proved to be such a problem and a great deal of time was spent teaching this concept. Pictorial representations, mind mapping, RAP and 'fill the balloon', (cf. 4.5.4.5), proved successful.

Certain strategies may facilitate the construction of meaning but readers also need to have metacognitive skills to apply the strategies and monitor their comprehension, therefore the instruction of how to apply metacognitive processes, should receive priority.

5.3.7

<p style="text-align: center;">PROVIDE A METACOGNITIVE CONTEXT IN WHICH METACOGNITIVE PROCESSES ARE TAUGHT</p>

Metacomprehension (cf. 2.3.3.1), is the ultimate aim in metacognitive strategy instruction, therefore it is necessary to provide a context, right from the start in which this could be nurtured. A metacognitive context is one in which pupils are taught the process of learning by being exposed to cognitive skills training programs which comprise the training of strategies and skills, self-regulation and awareness (Baker and Brown 1984:38). It is also important to expedite the pupils' control of their learning processes in order to independently implement strategies. When pupils aware of themselves as readers, the reading tasks which have to be fulfilled and strategies available, they are in a position to take control of their own learning.

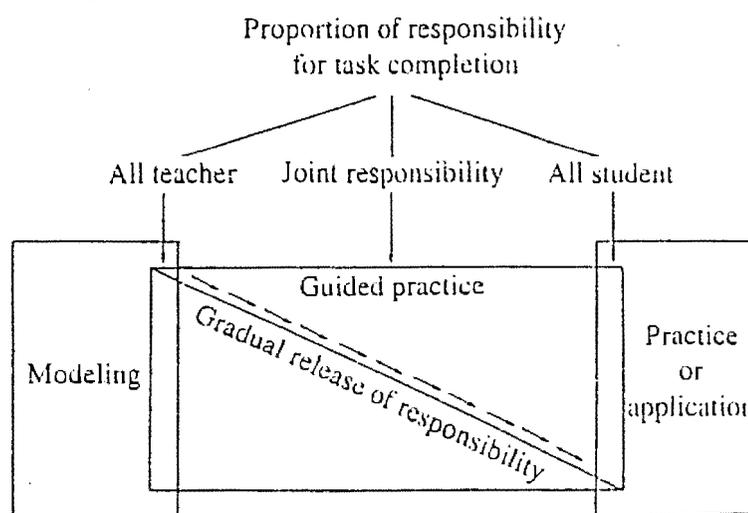
To facilitate a metacognitive context and ensure the pupils' optimal use of their metacognitive processes, the teaching methods used should be explicit, such as modelling, demonstration, thinking aloud and reciprocal teaching (cf. 4.4). However, it is not difficult to be completely overwhelmed by the plethora of strategies available in the literature. Every strategy has such good ideas that need to be tried, but experience has taught that the selection of strategies must be very careful. *Pupils cannot just be given a repertoire of strategies* and be expected to recall the right one for the right occasion. Palincsar and Ransom (1988:786) suggest three criteria for use in selecting reading strategies:

- strategies must be adaptable for use in different situations
- they must facilitate pupil interaction with the text as well as monitor comprehension
- the cost/benefit ratio of the strategy must be justified, for example a strategy may take longer than another to teach, but in the long run the benefits of the strategy which takes longer outweighs the initial sacrifice.

The researcher adds the following criteria:

- strategies must foster independence (pupils are on their own!)
- strategies must be relevant to the pupil's needs and abilities. Not all strategies suit every pupil.
- strategies must be meaningful and worthwhile to the pupils. The results must be tangible enough for the pupils to feel the benefits of all their efforts.

Pupils must be given many opportunities to practice the strategies. Guided practice is required with a gradual release of the teacher.



Pearson and Gallagher (1983) cited by Slater and Graves (1989:156).

Figure 36

Learning disabled pupils need regular prompting to apply strategies while they are reading. Acknowledge pupils' work in a positive way, show them where they can improve and encourage the keeping of records of their success. That their reading is improving as a result of strategy application is important for the pupils to know and is also highly motivating. The long term benefits of the strategies and their applicability in different subjects and situations may also be stressed (Baker and Brown 1984:38). The instructional emphasis must be on prereading activities so that vocabulary and relevant concepts are explained prior to the pupils reading the set text as opposed to postreading (Santa 1986:305).

Unless the pupils are motivated, there is very little chance of a breakthrough.

5.3.8

SUCCESS BREEDS SUCCESS

When strategies succeed, pupils are motivated to use them again. Motivational factors are decisive for the continued implementation of strategies (Borkowski, Carr, Rellinger and Pressley 1990:58). It would seem to Ryan, Ledger, Short and Weed (1982:55,56), that poor readers do not realise the significance of personal involvement in constructing meaning, monitoring comprehension and accommodating their reading exercises according to their goals. In addition their constant failures (cf.3.3.4.2) and the realisation that they really have to work very hard to achieve success contribute to their lack of motivation to use strategies.

A useful place to begin is with materials that are applicable regarding interest, content and difficulty. Wade and Reynolds (1989:7) cite the findings of Shirey and Reynolds (1988) which reinforce the demand that reading materials be used which pupils find interesting. They continue by saying that instructional activities and reading materials also need to be significant and appropriate for the realisation of the pupils' personal learning goals. Allowing pupils to select their own reading material is a "powerful motivator" (Angeletti 1991:288). This provides an opportunity to take advantage of the pupils' interests.

Teachers need to be positive and believe in their pupils' capability to learn strategies and implement them independently. Pupils must believe in their potential to control and regulate their thinking. The pupils' low self esteem is evident in the lack of confidence and belief in themselves as a result of all their failures. It is so much easier to remain uninvolved and avoid set tasks.

The researcher formulated the following ground rules:

- passivity and indifference would not be allowed
- active participation with enthusiasm was the password
- no negativity, after all, new ground was being uncovered (there is no such word as can't)
- expect changes due to variation and adaptation
- total commitment to the instruction of reading comprehension and all it entails, is very important.

Gearheart and Gearheart (1989:333), advocate that teacher's need to be aware of "the student's need for security, belonging and importance." Alvermann and Qian (1994:29) specify the

need for an environment free of risks where they feel safe to attempt new strategies. One sure way to make pupils feel secure is through ensuring that they experience success. Success breeds success, so start with the basics in order that the benefits of the strategies can be experienced. For example, a start is being made with the identification of main ideas. Use the RAP strategy (cf. 4.5.4.4) and select a passage where the main ideas are explicitly stated and show them how the different sources of knowledge are combined. Encourage independence by starting with the class as a whole (modelling, direct instruction, think-aloud (cf. 4.3.1)), then gradually release the teacher's hold by dividing into groups (reciprocal teaching (cf. 4.3.1)), then pairs and finally the pupils are on their own.

Newspapers and computer aided instruction proved to be ideal media to capitalise on the pupils' interests.

Newspapers can be used as a controlled material as recommended in the step by step method (cf. 4.5.2.5). They also offer a variety of topics of interest, length and vocabulary and cover all subjects in the secondary school curriculum.

Newspapers have proved to be a success and this is largely due to the fact that pupils are encouraged to choose their own articles. Apart from the interest factor, significance and appropriateness of the topic chosen is ensured. Articles chosen must not be criticised. Remember that the pupils were given their choice. Initially articles may be chosen with the specific aim of shocking the teacher. Weather it! On the other hand, they may choose the shortest article, it must not matter, as long as it is of interest. When pupils choose articles of their own interest they usually have prior knowledge which they can use

as a frame of reference. Although the vocabulary may seem too difficult for them to read, this is not the case as the vocabulary forms part of their prior knowledge and they also use contextual clues. Newspapers provide opportunities to skim, scan and read for detail. Lively debates have also resulted with opportunities to see others' points of view.

When using newspapers, pupils can use a highlighter, circle, scribble notes, cut out, delete information and rearrange to name just a few activities. One of the biggest advantages is that they are not textbooks and in fact have nothing to do with text books. Newspapers are read by everyone, for information and pleasure so there are no negative connotations. They are also not graded, so learning disabled pupils do not feel discriminated against. The readability level is not sophisticated.

One of the weakest readers in the class spends a great deal of time training at the local gym. Healthcare and weight training is important to him. He was therefore provided with healthcare magazines or newspapers on health. It was incredible the difference his frame of reference made to his reading with meaning successfully.

Lifeskills for the preparation of the pupils for the world out there form an integral part of the curriculum in Specialised Education and newspapers are a powerful medium for the instruction of lifeskills. By teaching pupils to identify main ideas (cf. 4.5.4.5), discriminate supporting details (cf. 4.5.4.5), verify cause and effect relationships (cf. 4.3), make inferences (cf. 4.5.4.3 (b)), draw conclusions, differentiate between fact and opinion, ascertain the point of view of the author, recognise bias and propaganda techniques (cf. 4.3), make predictions (cf. 4.5.3.2)

and read charts and maps (cf. 4.5.7), teachers are teaching lifeskills. The classified columns are perfect for encouraging pupils to find accommodation, work, transport or perhaps something in the personal column. Pupils can be asked specific questions in an attempt to teach them to read for information (Criscuolo and Gallagher 1989:440-442).

Fluency must be encouraged and for those who need additional assistance, *computer programs* can be used. The rate and fluency of many of the pupils is still hampered by a lack of automaticity. To embark on a word identification programme in the secondary school may be seen as degrading. To overcome this, pupils were put onto a graded reading computer program (Bouwer HSRC 1993), which proved successful, highly motivating and pupils felt secure in the privacy offered in computer instruction. Pupils have several options to facilitate speed increase and they are able to self select. They receive a printout after each session and the tangible evidence of their increased speed and accuracy is inspiring to witness. Added advantages of computer aided instruction are that the pupils can work individually at their own pace and feedback and reinforcement is immediate.

Each reading task must have a set goal, as goals regulate how the passage will be read as well as how well it should be monitored for understanding.

5.3.9

SET AIMS

During the pre-reading phase, (cf. 4.5.6), pupils were encouraged to set long term and short term aims. The long term aims would be more of a personal nature and these are important motivational tools. Pupils should write their personal goals down and confirm their progress regularly.

Short term goals (objectives), determine how the set reading task will be done. If the reader has to skim or scan, triggering events of not understanding will not be as important as if they were reading for specific information (Brown 1980:454,455). This is an important consideration for learning disabled pupils as they tend to read each assignment at the same rate. Exposing them to the different rates of reading and the reasons for each and then insisting on a purpose for each task, definitely facilitates comprehension.

5.3.10

AIM FOR GENERALISATION AND TRANSFER

The pupils can become dependent on the teacher for prompts and cues or they only apply the strategies to the subject in which they learnt the strategy (cf. 3.3.4.3; 3.5.1.4). The researcher only had an half hour per week to implement the reading comprehension program, so these somewhat isolating conditions were highly susceptible to a lack of transfer and generalisation. Larson and Gerber (1992:136,137), refer to the

research of Palincsar and Brown in the early 1980s who hypothesised that the generalisation and transfer is hampered by pupils lacking understanding of the necessity for the use of strategies and a lack of metacomprehension; pupils did not participate in the learning process and did not have efficient problem solving strategies available (cf. 3.5.1.4). In addition they lacked the executive control processes (cf. 3.4.4.1), to select cognitive strategies and monitor performance, that is they lacked metacognition (cf. 3.4.3.6).

In order to overcome this, it is of vital importance that strategy instruction is more than a description of a prescribed formula under specific conditions. Pupils need to see the point of the exercise and be actively involved. Explanations should include *what* the strategies are, *how* to use the strategy, how they differ one from the other and how to evaluate the use of the strategy and *when* and *why* they are most effective (cf. 4.4.4), (Campion and Armbruster 1985:333). The significance of this cannot be underestimated.

Generalisation and transfer will be enhanced if in giving pupils feedback, they see the link between their success and their *own application* of the strategies. Learning disabled pupils tend to discount the value of effort (cf. 3.3.4.2) so if they think they have succeeded as a result of the teacher's efforts, they will not persevere to use strategies (Ryan, Ledger, Short and Weed 1982:57).

The requirements for successful reading comprehension (cf. 2.3.6), include metacognition and specifically the awareness of task, strategy and one's performance, that is, metacomprehension (cf. 2.3.3.1 (d)). What happens then when

pupils experience problems as they read? Having been described as deficient in the implementation of strategies, it is imperative that learning disabled pupils are instructed in 'fix-up' (cf. 4.5.4.2 (a) strategies (Brown, Armbruster and Baker 1986:61,62).

Every teacher is a language teacher and irrespective of the subject being taught, reading for meaning is a prerequisite.

5.3.11

INSTRUCT PUPILS IN STRATEGIES TO COPE WITH TEXT BOOKS

Researchers, Anderson, Hiebert, Scott and Wilkinson (1985:71,72) state that

"Comprehending information in textbooks is easier if students are instructed in strategies that cause them to focus their attention on the relevant information, synthesize the information and integrate it with what they already know."

Apart from the fact that many of the textbooks are ineffective due to their lack of organisation, pupils need to be prepared to cope with any book they may be required to read. They therefore need to be instructed in strategies for eliciting and coordinating crucial information (cf. 4.5.8). As a foundation for strategy application pupils need to be taught the basic knowledge of vocabulary, syntax, style, coherence, structure etc.

Efforts were made to make text books easier by controlling

readability levels, using easier vocabulary and shorter sentences. Orasanu and Penney (1986:7,8), cite the findings of Anderson, Armbruster and Kantor (1980), who researched these efforts. They found that the connective language required for coherence had been excluded. Orasanu and Penney (1986:7,8), continue by citing Green-Morgan's (1984), findings that the simplification of textual information resulted in subject matter that lacked substance.

Questioning is a basic tool used by teachers to expedite thought and discussion. As pupils' thinking and reading is influenced by the types of questions put forward, questioning forms an integral part of strategies to facilitate reading comprehension.

5.3.12

PAY SPECIAL ATTENTION TO QUESTIONING

Teachers must not only ask questions which deal with the information on a literal level of comprehension (cf. 4.5.3.1; 4.5.4.3; 4.5.7.1; 4.5.7.2; 4.5.7.3). Instead a variety of questions: predictable, mind-opening, introspective, ponderable, elaborative knowledge (Manzo and Manzo (1990) as cited by Bos and Vaughn (1991:157) are advocated. The researcher confirms the word of caution given by Nessel (1987:604), who says it is necessary to keep the story being read at the focal point and questions such as "Have you ever...?" could be distracting. She therefore postulates the use of the following questions which she believes will facilitate the retention of pupils' attention: "What do you think will happen?" "Why do you think so?"

Reading aloud is not a remedial method on its own but it provides an excellent opportunity to model the construction of meaning through the interaction of the reader, the text and the context.

5.3.13

READ ALOUD TO PUPILS

Reading aloud proved to be an excellent way to introduce pupils to strategies initially and whenever new strategies were demonstrated. Metacognitive skills and strategic behaviour were modelled using the thinking aloud method (cf. 4.4.3) whilst reading. Visualisation (cf. 4.5.4.1) of good descriptions, inferential and critical thinking (cf. 4.5.4.3 (b)) and making predictions (cf. 4.5.3.2) can be encouraged. Draw attention to vocabulary, the author's specific characteristics and textual organisation (cf. 4.5.5). Inspire discussion and provide feedback. "Yes, I like the way you put that"; "that's an interesting thought but what about.....?"; "would you agree with X? Why?"; "ex-cel-lent!" Every appropriate effort no matter how small, must be acknowledged and progress must be reinforced.

Instil a love of literature through an enthusiastic and dramatic approach to the written word and at the end of a lesson, stop at a crucial point so that the pupils can eagerly anticipate the next episode (Krieger 1990:619). It also challenges the memory.

It is hoped that teachers will find these guidelines a valid starting point for the direction of their reading comprehension instruction. In providing these guidelines as directing principles

from practical experience, the trial and error experiences have been eliminated and methods and strategies which succeeded have been emphasised. Implementing these guidelines should also prove to be a time saving exercise after all, time is of the essence in the secondary school.

5.4 CONCLUSION

There are certain aspects mentioned in the literature which have been confirmed in the researcher's teaching experience which need to be carefully considered. There is a need for specificity in teaching strategies to learning disabled pupils.

Great care must be taken in the selection of strategies because strategies which are beneficial to pupils who are not learning disabled are not necessarily beneficial to learning disabled pupils (Cooney 1991: 189). Cooney continues by quoting the research of Wong and Jones (1982) who taught learning disabled adolescents self-questioning strategies (cf. 4.5.4.3). While the performance of the learning disabled adolescents improved, the opposite proved true for non learning disabled pupils. The pupil's individual needs should always be taken into account in order to find the best way to teach the individual pupil.

Specific strategies for specific purposes in specific situations must be taught as opposed to merely giving the pupils a repertoire of strategies (Paris and Winograd 1990:23). Conditional knowledge (cf. 5.3.1) needs to be emphasised if pupils are to really benefit from using strategies as a cognitive means to enhance their reading. A great concern is that the pupils do not spontaneously implement strategies, they need

prompts from the teachers. It is almost as though they are afraid to risk for fear of failure. Wong (1980:36) offers the suggestion that it is possibly because of their learned helplessness (cf. 3.3.4.3). She proposes that the years of constant failure have taken their toll and had a debilitating effect on the pupil's motivation. They have consequently become dependent on the teachers for assistance. Ryan, Ledger, Short and Weed (1982: 56) who also experienced the need for continued guidance by learning disabled pupils, confirmed that the history of failure experienced by these pupils as a reason. However they added that "their less adaptive causal attributions and the greater effort required for them to achieve success" would also have a detrimental effect on learning disabled pupils applying strategies.

Whilst it is important to be realistic in one's expectations, *it cannot be denied that learning disabled secondary school pupils benefitted from reading comprehension instruction.* Through the use of strategies, the pupils were given tools to assist them compensate for their disabilities and they became far more active in the construction of meaning through the use of metacognitive skills. If special attention is given to the limitations mentioned and reading comprehension is instructed the pupils will be able to become independent learners who can read to learn. The teachers can make the difference!

CHAPTER SIX

SYNOPSIS, FINDINGS AND RECOMMENDATIONS

6.1 SYNOPSIS

6.1.1 Introduction

This research study is from an orthopedagogic/orthodidactic perspective about the teaching of reading comprehension to learning disabled secondary school pupils. The researcher, in her involvement with the teaching of learning disabled pupils over the past fifteen years, found that secondary school pupils were facing their matriculation examination, with severe reading comprehension difficulties. The preparation for these exams requires a great deal of reading. It was thus out of concern for these pupils that this dissertation was embarked upon.

In searching for the answers to the problem, mainly research literature was used. An indepth study of reading comprehension and learning disabled secondary school pupils with a reading comprehension deficit was made in order to determine what the specific problems of these pupils are and how these deficits impaired their reading comprehension.

In the analysis of the problem, consideration was given to:

- what the causes of the reading comprehension problems in learning disabled secondary school pupils are and

- what could be done to remediate the lack of reading comprehension in learning disabled secondary pupils? (cf. 1.5).

In order to fulfil the aim of this study, attention was given to the following:

- what is reading (cf. 2.2.1) and which processes are involved in reading and reading comprehension? (cf. 2.2.2).
- what are learning disabilities (cf. 3.2) and who is the child with a reading comprehension deficit? (cf. 3.3.2).
- what are the problems preventing learning disabled pupils comprehending what they read? (cf. 3.4).
- an investigation was done to determine which reading methods (cf. 4.4) and strategies (cf. 4.5) may have value in the teaching of reading comprehension to learning disabled secondary school pupils.
- from an indepth study of the abovementioned, as well as the researcher's knowledge and practical experience of the problems encountered by the learning disabled pupils, pedagogically accountable guidelines which could enhance the reading comprehension of learning disabled secondary school pupils were formulated (cf. 5.3).

6.2 THE MOST IMPORTANT FINDINGS OF THIS STUDY

The following findings evolved from the study.

6.2.1 Reading comprehension is not instructed in secondary schools

Not only is reading comprehension not instructed in the secondary school, it is generally neglected in favour of mastering decoding skills (cf. 3.5.2.2 (a); 4.1). One of the major reasons for this neglect of reading comprehension instruction is the lack of knowledge on the part of the teacher to instruct reading comprehension (cf. 4.2.1) and the belief that the secondary school teacher's task is to provide information (cf. 2.3.3.2 (a)). Secondary school teachers generally believe that reading comprehension should have been instructed in the primary school (cf. 2.3.3.2 (a)).

6.2.2 Learning disabled pupils have unique deficits

Learning disabled pupils are distinguished by several characteristics, all of which do not manifest in the same way thus forming an heterogeneous group. Learning disabilities do not affect all spheres of performance, so uniqueness is evident in that each child has their own strengths and weaknesses (cf. 3.2). Learning disabled pupils need more than what is being offered in the education situation, particularly in the secondary school where there is such a reliance on the meaningful reading of text books and the need to work independently.

The teacher's responsibility is not over until the pupil takes responsibility for reading comprehension (cf. 4.5.5.4). Years of constant failure can have a debilitating effect on the motivation of learning disabled pupils to do anything for themselves. They lack the perseverance to accomplish tasks well within their capability and this results in learned helplessness (cf. 3.3.4.5). In addition, learning disabled pupils attribute their failures to a lack of ability as

opposed to a lack of effort (cf. 3.3.4.2). This learned helplessness together with the discounting of the value of effort can result in learning disabled pupils becoming very dependent on the teacher for assistance and guidance in the application of strategies. Unless the teacher prompts them the strategies are not spontaneously implemented (cf. 5.4). Taking responsibility will require that the pupils generalise and transfer their strategies to other tasks and situations. For learning disabled pupils this is an area of difficulty (cf. 3.5.1.4). Generalisation and transfer is exacerbated by the isolation of information from the pupil's experience and knowledge (2.3.3.2 (a)). Generalisation and transfer is enhanced by pupils seeing that *they* have succeeded as a result of *their* efforts and not of the teacher (cf. 5.3.10).

6.2.3 Learning disabled pupils need to be instructed in reading comprehension

This study revealed that there is a very urgent need for learning disabled pupils to be instructed in reading comprehension. For learning to take place, learners must be active as knowledge acquisition is neither a supplementary procedure nor merely a stimulus response (cf. 2.2.2). Reading is a complex process and cognitive processing is required to combine information after the perceptual processing has taken place so that the text can be comprehended (cf. 2.2.2.1). In order to construct meaning (cf. 2.3.2) there must be an active interaction (2.3.3) between the reader (cf. 2.3.3.1), the text (2.3.3.2) and the situation or context (cf. 2.3.3.3) in which the text is read. Readers must be able to recognise words (cf. 2.2.4.2) and be linguistically competent (cf. 2.3.3.1 (a)). They need a frame of reference in the form of a sound prior knowledge (cf. 2.3.3.1 (b)) on which they can draw to interact with new information in order for meaning to result. The

reader's knowledge includes metacomprehension (cf. 2.3.3.1 (d)) which consists of knowledge about reading and reading tasks, oneself as a reader and comprehension monitoring. Interest and motivation (cf. 2.3.3.1 (c)) on the part of the reader, facilitates reading comprehension. However, reading comprehension is not only dependent on the reader. The text and context constitute the external factors affecting comprehension and have a crucial role to play in promoting reading with meaning.

6.2.4 Metacognitive awareness is not being fostered through instruction

Metacognitive awareness promotes the pupil's use of strategies (cf. 2.2.2.1 (c)). However there is no empirical evidence to suggest that metacognitive awareness is being fostered in instructional programs (cf. 4.2.1). Pupils are therefore not being exposed to cognitive skills training programs where the processes of learning (the how of learning) are being taught (cf. 5.3.5). Metacomprehension is the knowledge and control readers have over their own cognitive activities during reading (cf. 2.3.3.1 (d)). Without metacomprehension readers will not be able to monitor their comprehension through evaluation and regulation (cf. 2.2.2.1 (d)).

6.2.5 Reading instruction is an ongoing process

Reading comprehension only results when readers utilise their cognitive processes such as attention (cf. 2.2.2.1 (i)), perception (cf. 2.2.2.1 (ii)), memory (cf. 2.2.2.1 (iv)) and metacognition (cf. 2.2.2.1 (c)) to change graphic information to indicate their knowledge and experience (cf. 2.3.2). If pupils are unable to attend (cf. 3.3.3.2; 3.4.3.2; 3.4.4.1) adequately, the external input (cf. 3.4.4.2) will be incomplete. The sensory register (cf.

3.4.4.3) will be limited by perceptual deficits (cf. 3.3.3.3; 3.4.3.3) and memory deficits (3.3.3.4; 3.4.3.4) will affect the short term, work and long term memory (cf. 3.4.4.4). In turn the executive functioning and metacognition will be impaired (cf. 3.4.3.6; 3.4.4.1) The motor activity (cf. 3.4.4.5) which in this case is reading with meaning will therefore be inadequate. Linguistic (cf. 2.3.3.1 (a)), neurological (cf. 3.2.2) and contextual (cf. 2.3.3.3) variables also play a role in the construction of meaning.

It was confirmed in the literature that learning disabilities *continue into adolescence* and remain as serious problems pervading academic achievement, vocational guidance and social and emotional adaptation (cf. 3.3.1; 3.3.2; 3.3.3). The demands on reading in the secondary school are very heavy, therefore it is imperative that learning disabled pupils continue to get the support they need, through ongoing reading comprehension instruction in the secondary school.

6.2.6 Reading instruction is not only the responsibility of language or remedial teachers

Subject teachers should also accept responsibility for the teaching of reading comprehension and not leave it to the language or remedial teachers (cf. 5.3.3). By incorporating reading instruction into all subjects in the curriculum (cf.4.5.6), this could be taken care of and the deficits (cf. 3.4) of the learning disabled pupils can be accommodated without affecting subject content detrimentally. It should never be presumed that pupils have the required schemata or preskills to benefit from conventional instruction in comprehension (cf. 2.3.3.2 (a); 4.2.1). In the secondary school there is a greater need for the pupils to function on higher cognitive levels and therefore teachers must give priority to the *how* of learning (cf. 4.1).

6.2.7 Study strategies should be included in the lesson planning and preparation of every subject teacher

The subject content must be internalised and therefore the information needs to be understood and remembered. This requires reading to learn hence the implementation of study strategies (cf. 2.2.2.1 (c)). These strategies require active involvement on the part of the pupils thus facilitating internalisation. That study strategies form an integral component of lesson planning and preparation, will ensure that *study is an ongoing process* and not an activity to embark on the night before a test or examination. It will also promote the organisation of information into the memory which in turn facilitates the storage of information for retrieval (cf. 3.4.4.4). Continuous use of study strategies will reinforce maintenance (cf. 4.5.2.6) and enhance generalisation and transfer to other subjects and situations (cf. 5.3.10)

6.2.8 Strategies to facilitate the understanding of textbooks should be used in every subject

As learning disabled pupils struggle to read textbooks (cf. 3.5.2.1), they should be taught strategies that will assist them to understand the nature of the text (cf. 2.3.3.2 (a), text organisation (b), content and topic (2.3.3.2 (c), language (2.3.3.2 (d)) and vocabulary (2.3.3.2 (e), (f)), (cf. 4.5.8). Difficulties with word recognition (cf. 3.5.1.1) must be addressed. The pupils' deficits are pervasive, hence the need for the orthodidactic support in every subject.

6.2.9 The teacher's presumptions regarding reading instruction can have a detrimental effect on reading comprehension

Reading comprehension instruction will not be seen as a priority by teachers who believe that reading comprehension develops automatically once the child can decode (cf. 2.2.3) or that phonic skills are more important than subject content instruction (cf. 4.2.1). A limited knowledge about reading comprehension processes could result in teachers seeing no difference between the processes required for expository and narrative text (cf. 2.3.3.2 (b); 4.2.1). An additional concern is the presumption of teachers that all pupils have the required skills and prior knowledge to read with meaning (cf. 2.3.3.2 (a); 3.5.2.2 (b)).

6.2.10 Teachers often exacerbate the problems experienced by learning disabled pupils

Teacher made constraints can limit what is learned by the pupils. The neglect of an interactive approach (cf. 2.2.2.3), will result in either a bottom-up or a top-down emphasis (cf. 2.2.2.3), neither of which is sufficient to encourage reading with meaning. The timing of questions can hamper comprehension (cf. 3.5.2.2 (c)) as can the manner in which teachers ask questions and the type of questions asked (cf. 3.5.2.2 (c)). If pupils are required to read to an audience, comprehension may be inhibited by anxiety.

6.3 RECOMMENDATIONS

In the light of the abovementioned findings and conclusions as well as the original problem which gave rise to this study (cf. 1.2.3), the following recommendations are made.

6.3.1 The learning disabled's potential should be utilised

- Considerations applicable to the recommendation
- the learning disabled child has an average or even above average intellectual potential (cf. 1.2.2.3). Although the learning disabled experience specific deficits in certain areas (cf. 3.3), they do have positive potential
- this potential should be identified as soon as possible in order that it can be utilised in the development of reading comprehension
- early identification is preventative in that corrective procedures can be employed to prevent problem areas manifesting
- strategies should also be exposed to pupils as soon as possible so that it becomes a way of learning instead of an addendum in the secondary situation.

6.3.2 Learning disabled secondary school pupils must be instructed purposefully in reading comprehension and specifically taught strategies in order for them to become skills

- Considerations applicable to the recommendation
- when strategies become internalised and are therefore automatically implemented they are called skills (cf 1.2.6)
- strategies which have become internalised will result in the pupils being able to transfer and generalise strategies to different situations as the needs arise (cf.5.3.10)

- the learned helplessness of learning disabled pupils (cf. 5.1), their passive learning and production deficiency (cf. 3.5.1.4) requires that these pupils are specifically taught strategies
- *guidelines* are necessary for class and subject teachers (cf. ch 5).

6.3.3 Teachers must have a thorough knowledge of the learning disabled pupil's unique problems

- Consideration applicable to the recommendation
- from the literature (cf. 4.2.1) and from practical experience (cf. ch 4), it is evident that there is a paucity of knowledge regarding learning disabilities amongst teachers in the secondary school situation. Consequently there is a lack of understanding as to the needs of learning disabled pupils.

6.3.4 Learning disabled pupils must be taught how to use their metacognitive skills maximally in order that their metacomprehension can be developed

- Consideration applicable to the recommendation
- metacognition facilitates the process of learning and is conducive to the teaching of strategies to promote successful reading comprehension (cf. 5.3.7; ch 4).

6.3.5 Reading methods and strategies must be selected with the aim of fulfilling the requirements of learning disabled pupils

- Considerations applicable to the recommendation

- the pupils' individual needs should always be taken into account in order to find the best way to teach the individual pupil (cf. 5.4)
- strategies which are beneficial to non learning disabled pupils may not necessarily be beneficial to learning disabled pupils (cf. 5.4)
- there is a need for conditional knowledge to be emphasised in the teaching of strategies to learning disabled pupils (cf. 5.4)
- learning disabled pupils cannot just be given a repertoire of strategies to draw from as their needs arise.

6.3.6 Subject teachers must have a knowledge of reading methods and strategies which are applicable to their own subject

- Considerations applicable to this recommendation
- every subject differs according to its nature and requirements and therefore different strategies will be required to fulfil the needs of each subject
- if a basic strategy is used (cf. 5.3.4), a knowledge of reading methods and strategies will allow the teacher to make the required adaptations to use the methods and strategies flexibly.

6.3.7 Reading comprehension must form an integral component of subject teaching to learning disabled secondary school pupils

- Considerations applicable to the recommendation
- in the secondary school there is an increasing dependence on *reading to learn*

- the uniqueness of the deficits experienced by learning disabled pupils requires continuous accompaniment.

6.3.8 Research should be undertaken to answer the question of why the learning disabled depend on continued guidance to implement strategies.

■ Considerations applicable to the recommendation

- the effects of learned helplessness on learning disabled pupils (cf. 3.3.4.3; 5.4)
- learning disabled pupils require a greater amount of effort to achieve and they lack flexibility in coming to terms with the characteristic problems underlying their learning disabilities (cf. 5.4)
- learning disabled pupils tend to apply strategies, if they are learnt, only to the particular situation in which it was taught (cf. 3.5.1.4; 5.3.10; 5.4).

6.3.9 Research on the limitations that learned helplessness has on the generalisation and transfer of strategies by learning disabled pupils should be undertaken

■ Considerations applicable to the recommendation

- the effects of learned helplessness on the learning disabled (cf. 3.3.4.3; 5.4)
- the effect of a production deficiency (cf. 3.5.1.4; 5.4)

- the tendency in the secondary school's curriculum to isolate information from the pupils' experience and knowledge (cf. 2.3.3.2 (a))
- the role of metacognition (cf. 5.3.10; 3.4.3.6; 3.4.4.1; 3.5.1.4).

6.3.10 Teacher training should include the teaching of reading, reading methods and strategies by class and subject teachers, to all pupils especially the learning disabled pupils

- Considerations applicable to this recommendation
- in every course offered there should be a module for the instruction of reading. This will mean that the nature and structure of all subjects offered in secondary schools for learning disabled pupils will be studied
- reading methods and strategies which can make a difference to each subject can be trained
- remedial teaching should be a compulsory subject for any higher education diplomas
- it is not enough that teachers know their subject, they must know their child as well. This will facilitate their understanding of how the pupil is functioning and what corrective actions to take
- in-service training specifically on the instruction of reading comprehension is recommended for those teachers in-service. These can take the form of workshops where the teachers are practically involved in their exposure to reading methods and strategies.

6.3.11 There is an urgent need for research into the suitability and readability of text books and prescribed books being used in schools for learning disabled pupils.

- Considerations applicable to this consideration
- the subject content of the text books being used at present is a far cry from the interest and difficulty level of learning disabled pupils. It is understood that in simplifying the information, the essence thereof could be lost, however a great deal could be done to facilitate understanding
- understanding could be facilitated through the use of visual presentations such as graphic overviews, semantic mapping, mind maps to name a few could be used to facilitate the pupil's understanding
- specific attention should be given to the nature of the text, the organisation, the vocabulary and the content.

6.4 CONCLUSION

It is clearly evident from this study that learning disabled pupils have significant deficits preventing them from successfully comprehending what they read. In an endeavour to find explanations for these deficits, it was necessary to ascertain which components are prerequisites for successful reading comprehension. Reading is a complex process comprising word recognition and comprehension. There is a strong interrelationship between these two components of reading and progress is dependent on proficiency at each stage. Adequate functioning of one's cognitive processes is a prerequisite for successful reading

comprehension and this includes the way information is processed. Metacognition and metacomprehension facilitate the ability to read strategically. For reading to be purposeful, it must be goal directed, thus motivation and interest have a significant role to play.

The following diagram captures the above information visually and is repeated for effect and clarity.

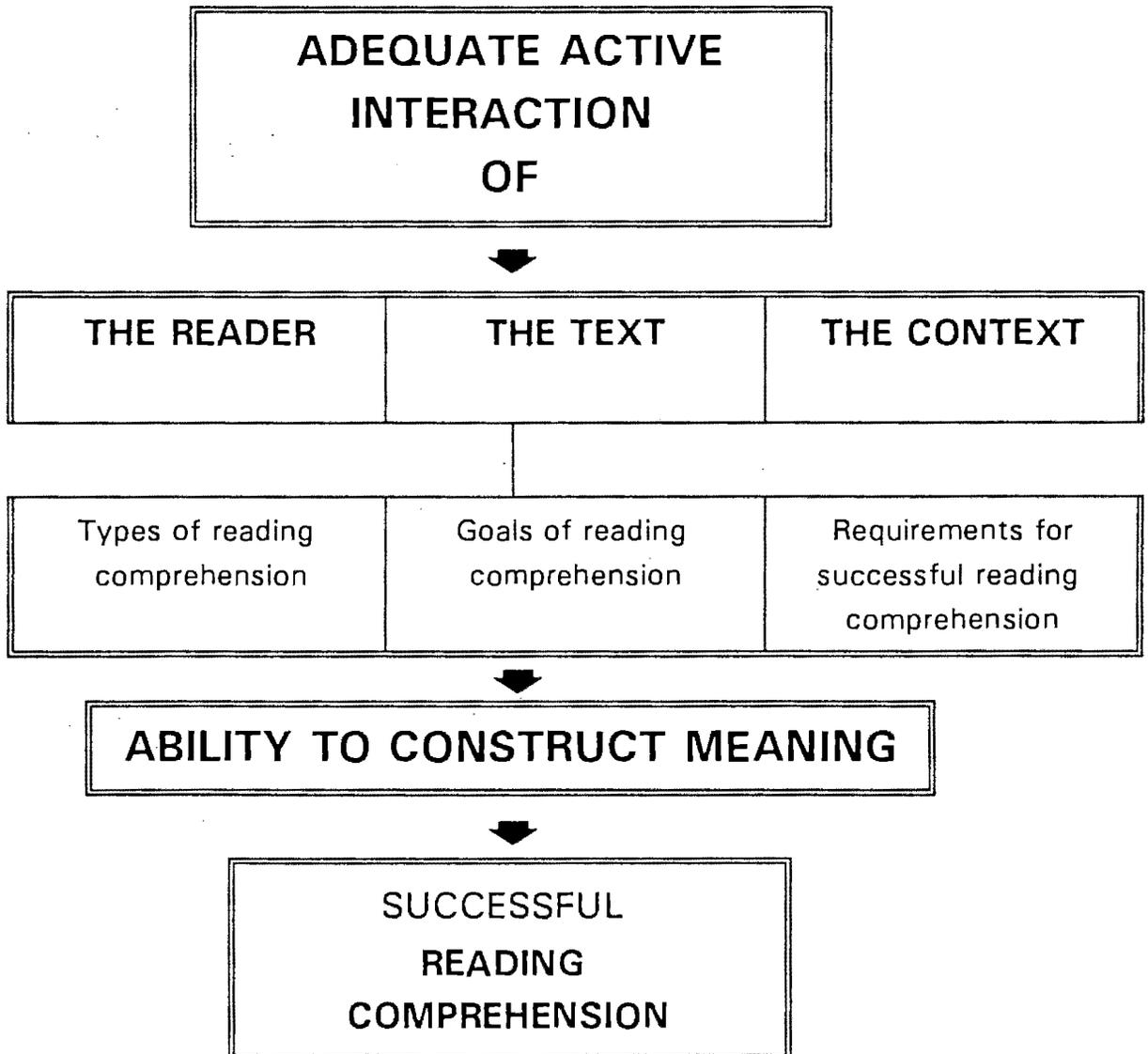


Figure 37

With these requirements in mind, the learning disabled adolescent has been studied and it has been confirmed that their adolescence, academic problems and learning disabilities make their lives very difficult. Of significance is the pervasive effect that any complications or weaknesses have. Reading difficulties result from inadequate cognitive functioning, information processing, linguistic incompetence and limited metacomprehension. Although external factors in the form of the text and the context make important contributions to successful reading comprehension, the limitations as a result of the learning disability cannot be underestimated. This must be remembered so that expectations are realistically set and every grain of success, however small is evidence of a huge step for these pupils on their way to independent learning.

It is firmly believed that the reading comprehension performance of learning disabled secondary pupils can be improved by paying special attention to the reader, the reader's interpretation of the text and the context in which the reading takes place. For this reason, a reading comprehension instruction program was implemented by the researcher for almost three years. Pupils were taught directly how to comprehend what they were reading. Strategies formed an integral part of the program in order to provide the pupils with the tools of learning. Knowing how to learn would facilitate controlling learning situations. From this practical experience, the researcher can conclude that *the reading comprehension of learning disabled pupils can be improved when they are instructed in reading comprehension using the correct reading methods and strategies.* Guidelines have been proposed to assist teachers in order that the reading

comprehension of learning disabled secondary school pupils can be enhanced and in so doing, facilitate their independent learning.

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Annexure A

How to make a MIND MAP

Write the topic word, (one that sums up the section/chapter) or heading in the centre of a clean page, lightly in pencil.

Take the titles/subtitles and
 arrange them clockwise around the central point and allow
 sufficient space
 begin at 1 o'clock

Search for the key words in each section or paragraph

These now branch from the titles/subtitles originally used

Colour (write over) the key words and branches with a coloured pen

There are two alternatives to choose regarding colours:

- * Use rainbow colours in order
 - red
 - orange
 - yellow or brown
 - green
 - blue
 - purple or black

R O Y GIVES B P

- * Use only **FOUR** colours

COLOURS assist one to remember.

Illustrate key words where possible. Illustrations tell a story and it is to facilitate your understanding, so they are highly personalised

Combine sections that link

Additional items can always be added

NB NB USE AS FEW WORDS AS POSSIBLE.