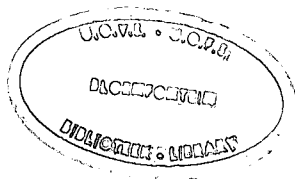


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THE PREDICTION OF LEARNING PROBLEMS
AMONG BLACK SCHOOL BEGINNERS

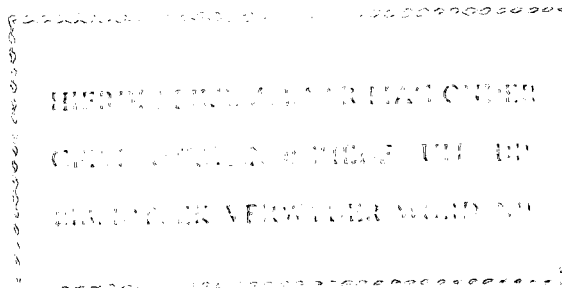
by

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Submitted in accordance with the Requirements
for the Degree of Master of Arts

in the Faculty of Arts
(Department of Psychology)

of the University of the Orange Free State
Bloemfontein.



August, 1988

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THE PREDICTION OF LEARNING PROBLEMS

AMONG BLACK SCHOOL BEGINNERS

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CHAPTER 1

INTRODUCTION

1.1 PROBLEM PREMISE

In a research of the literature it is noted that very limited information is available on learning disabilities among the black school child in the Republic of South Africa. The researcher has also not been able to find literature on the prediction of learning disabilities among black school beginners, and "great confusion exists in the RSA concerning the concept of learning impairments". (H.S.R.C. Education Research Programme No. 10. p. 43). This problem becomes more complicated because in general literature on learning problems there seems to be neither a single comprehensive, nor precise definition of learning disorders. Nor is there a clear description of which children may have a probability of developing a learning problem when they enter a formal academic situation. A learning difficulty appears to become evident when an expected average academic level is seriously impeded for some elusive and unaccountable reason during the normal progressive educational stages. In determining a principle, or fundamental truth underlying a learning disorder, it appears as a universal conclusion that there is a significant difference between what the child for his/her specific age group is scholastically capable of achieving and that which is actually being achieved (De Lange Commission, 1981., Hartstein, 1971., Kaluger & Kolson, 1978., Lerner, 1976., Loubser & Sharratt in Tollman and Watts, 1982., Myers &

Hamill, 1976., Myklebust, 1971., Spache, 1976., Wallace & McLoughlin, 1975).

There are many varied approaches to the learning problem which causes the discussion of learning disorders to become a contentious issue. Some of the most noteworthy approaches are the behaviouristic-perceptual- motor and developmentalist, linguistic and neurologically based theories.

This investigation will consider the learning disability approach as seen as a disorder of the basic psychological processes, and language development in terms of a developmentalist viewpoint. A few factors such as school readiness, enviromental influences and possible implications of a formal educational system on a black child could affect normal academic progress and will be aspects mentioned in the discussion which one should be aware of when evaluating a true learning problem requiring remediation.

One of the aspects in this discussion will be that the basic psychological processes of learning are not functioning properly, causing the child to have academic difficulties in spite of a normal mental ability (Kaluger & Kolson, 1978., Lerner, 1976., Wallace & McLoughlin, 1975). Learning disorders confounded by organic problems, resulting from injury, disease or maldevelopment of the brain will not be included for discussion (Hartstein, 1971., Johnson & Myklebust, 1967., Myers & Hammill, 1976).

Another aspect for consideration is that the basic psychological processes in fact may be functioning properly but that the necessary developmental and

maturational stages needed for acquiring learning skills has not been adequate nor sufficient by the time the child reaches the criterion age level to start school. The De Lange Commission found in 1981 (vol. 8., p. 46) that there is no reliable method of evaluating levels of maturity or intellectual potential and that those black pupils who show a possibility of under-achievement (for whatever reasons), or "who do not do well are simply not promoted to the next standard". Many black children who may be evaluated as 'not ready' for school or who have failed Sub A repeatedly, may benefit from enrichment and compensatory or auxiliary programmes within the school curriculum, to overcome the initial inadequacies experienced by the child in an academic situation (Wober, 1975). In addition, disadvantaged children may be learning disabled not because of faulty psychological processes. This may be a result of environmentally deprived perceptual experiences, since basic features within the environment are necessary for the acquisition of learning skills (Bender & Bender, 1979., Maslow in Wallace & McLoughlin, 1975., Wober, 1975). The above two points, school readiness and disadvantaged children would find their learning problems compounded by the implications of additional dysfunctional psychological processes.

Finally, the strangeness of a formalized western type education system imposed for the first time on many of the young black school-going children may be different to the child's own cultural and conceptual understanding of the world around (Herbst, 1982). This factor may create learning difficulties until the child successfully learns to bridge the gap between home environment and the demands of a formal

bicultural environment (Grové, 1982., Hauptfleisch & Grové, 1985). This aspect could further complicate the learning problem should one already exist, that is, dysfunctional psychological processes, level of school readiness, disadvantaged background.

Many children will, however, individually differ in the extent and range of their difficulties (Johnson & Myklebust, 1967., Lerner, 1976., Wallace & McLoughlin, 1975). Various researchers found that the drop out rate of black children was high and that several factors could influence academic proficiency if early learning difficulties or impairments were not effectively identified. (De Lange, 1981., Faas, 1981., Goldman & Schiffman, 1972., Mussen, Conger & Kagan, 1970). It seems important, therefore, that if a black child appears to be having learning difficulties, the nature and type of learning impairment or difficulty should be established as early as possible (H.S.R.C., No. 10, 1987). This evaluation not only identifies a specific problem, but also enables an adequate and comprehensive strategy of either remedial, enrichment or compensatory and auxiliary programmes to be implemented to help the child overcome his/her academic problems (De Lange Commission, 1981., Johnson & Myklebust, 1967., Lerner, 1976., Myers & Hammill, 1976).

1.2 PURPOSE OF THE STUDY

The purpose of this study is:

- to theoretically discuss the psychological processes of learning and to analyse the black

child's early language development stages as specifically related to learning problems.

- to discuss the implications of disadvantaged environmental and enculturational factors which could affect learning problems.
- to evaluate the ability of the ASB¹ to predict learning problems amongst black school beginners.

1. Aptitude Test for School Beginners.

CHAPTER 2

DEFINITION OF LEARNING DISABILITIES AND THEORETICAL DESCRIPTION OF DISORDERS OF THE BASIC PSYCHOLOGICAL PROCESSES

The definitions and descriptions of basic psychological processes are taken from various sources. These are interpreted in the context of the learning disability definition proposed in 1968 by the National Advisory Committee on Handicapped children as well as the 1981 report by the De Lange Commission. Kaluger & Kolson (1978, p. 3), from their research and observations consider that general agreement on definitions of learning disabilities are centred on "dysfunction in perceptual and conceptual processing in the central nervous system". However, the definition of learning disabilities given by the 1968 committee mentioned above is probably the most commonly used and according to Lerner (1976) and Myers & Hammill (1976, p. 3) the most meaningful and acceptable to professional groups. It is stated as follows:

"Children with special learning disabilities exhibit a disorder in one or more of the basic psychological processes involved in understanding or in using spoken or written languages. These may be manifested in disorders of listening, thinking, talking, reading, writing, spelling or arithmetic. They include conditions which have been referred to as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia, developmental aphasia etc. They do not include learning problems which are due primarily to visual, hearing or motor handicaps, to mental retardation, emotional disturbances or to environmental disadvantages".

The De Lange Commission has a similar definition of learning disorders (vol. 8, p. 4) stated in 1981 that "any child who does not achieve scholastically as he should in terms of his achievement potential, is scholastically impaired", and that

this "underachievement can present itself in scholastic skills (e.g. reading, spelling, writing or arithmetic)" or "as underachievement in specific subjects or subject groups (e.g. content subjects, languages, natural science subjects)".

At a recent research conference in Pretoria a project on Education for Black disabled was discussed by Gerber of the University of South Africa (1987, p. 9) in which the learning impairment term was defined according to the preferred MBD report in 1969 as "children with minimal brain dysfunction", and these children "have an average or above average intelligence and their motor functions, vision, hearing and emotional adaptation are within the normal range, but they display specific learning or behavioural impairments that are associated with deficits in the central nervous system. A dysfunction of the central nervous system is expressed in various ways and in different combinations of the following: an impairment of perception, conceptualisation, language, memory, attention, impulses and motor function". Thus, through all three interpretations of learning disabilities a basic problem appears to become evident as a disability to learn, or as a difficulty experienced in a learning process (Wallace & McLoughlin, 1975).

2.1 BASIC PSYCHOLOGICAL PROCESSES

The phrase 'basic psychological processes' is not specifically defined in any available literature but in an educational and psychological context it can be identified as being operations which involve learning systems of listening, thinking, reading, writing, spelling and/or arithmetic (Myers and Hammill, 1976, p. 10). When the optimal processing function within these learning systems becomes, or is dysfunctional, the progressive learning patterns necessary for the successful acquisition of scholastic skills is interrupted.

The functioning of particular neurological systems is obviously a requisite for a level of basic learning to occur and to support the functional level of psychological processes. In children with learning disabilities however, it is a criteria that primary problems of emotional disturbance, environmental disadvantage and sensory deficits are not factors to be included as causes of learning disabilities, i.e. primary problems may exist but ought to qualify only as a contributory aspect to, and not specifically nor necessarily result in a cause for learning dysfunction (Critchley & Critchley, 1978., Kaluger & Kolson, 1978., Lerner, 1976., Myklebust & Bosche, 1969., Wallace & McLoughlin, 1975). Impairment of neural or sensory pathways significantly affect the essential organic mechanisms of the learning system, but a disability of, or difficulties in the psychological process of learning is a different problem. This requires special educational programmes of remediation which the continuation of traditional academic learning methods do not generally improve (Bakker, 1972., Carlson, 1981., Hécaen & Albert. 1978., Lerner, 1976., Myers & Hammill, 1976., Russell, 1975., Witelson, 1976). It is also generally accepted that the learning disabled person has at least an average mental ability.

Therefore, this investigation centres around the dysfunction and disorders of psychological processes of learning which are hierarchically categorized for this purpose as sensation, concentration, perception, imagery/memory, symbolization and conceptualization (Johnson & Myklebust, 1967., Mann & Suiter, 1974). These categories are not mutually exclusive groupings as learning disabled children may show difficulties in a specific

category, or experience problems in several or all categories (De Lange Commission, 1981., Johnson & Myklebust, 1967., Myers & Hammill, 1976., Wallace & McLouchlin, 1975).

The following theoretical descriptions and definitions of the psychological processes are examined in relation to learning disabilities. In addition, general characteristics of black school children with learning disabilities will be discussed.

2.1.1 SENSATION

Sensation uses the most basic modalities of receiving information into the brain. It is "the lowest level of learning at which the learner receives initial input through his auditory, visual, tactual-kinesthetic, olfactory or gustatory senses" (Mann & Suiter, 1975, p. 230). Visual and auditory acuity are concerned with a child's verbal learning systems and it is fairly apparent that physical handicaps such as uncorrected far- or near-sightedness, squints, hard of hearing, hearing loss may contribute towards or even create compounding problems over a period (Lerner, 1976., Mann & Suiter, 1975).

Normal auditory acuity enables a child to hear sounds as they are and is a different issue to auditory perception. Visual and auditory problems are related to organic abnormalities of the eyes or ears. Defects of this nature would no doubt have a detrimental effect not only on the learning process but also on the general mechanisms of learning. (Mann & Suiter, 1975., Mussen Conger & Kagan, 1970).

2.1.2 CONCENTRATION

"Concentration requires the ability to focus auditory and visual attention to stimuli or sensory information for a period of time without losing the meaning or content of the incoming information" (Mann & Suiter, 1975, p. 225). The child needs to have this 'focusing' skill in which attention can be directed and fixed to a specific task so that acquisition of information can take place. In the case of the black child, factors such as malnutrition, poor eating habits, overcrowding in homes which upset sleeping patterns can all influence the degree of concentration required of the child in the school environment (De Lange Commission, 1981). If the child was not paying attention, or has an inability to concentrate, sensory information may well have been received by the brain but further processing of this may ineffectively continue. The successful functioning of this process is thus interrelated with aspects of perception, memory and symbolization (Lerner, 1976., Mann & Suiter, 1975., Myers & Hammill, 1976).

Difficulty in this process might show as a degree of distractability that the child may have in not being able to channel his attention for a long enough period. This would then interfere with concentration on the task being learnt and would show as too little attention being given to the specific intake of information. Occasionally it can present as too much attention so that essential detail is lost in an over abundance of information being taken in. The situation in this instance is created by a type of bombardment of instructions to the brain so that the child has difficulty either in focusing on, listening to or concentrating on specific incoming information, and screening out irrelevant from relevant information. If attention is effectively

maintained, information is encoded perceptually more selectively and accurately (Mussen, Conger & Kagan, 1970., Myers & Hammill, 1976).

Attention is also linked to auditory perception processes. A child having difficulty in localization of source and direction of sound may feel threatened and anxious (Mann & Suiter, 1975).

2.1.3 PERCEPTION

Perception is the ability to make intellectual sense from, or to become aware of information received through sensory stimulation. It is a learned skill (Lerner, 1976., Myers & Hammill, 1976). Mann & Suiter (1975), Myklebust (1964) and Wallace & McLoughlin (1975) define this process as an ability to discriminate, identify and interpret external visual and auditory stimuli in a meaningful way. The stimuli are received through the senses of visual, auditory, smell, taste and touch, as well as through kinesthetic and vestibular senses. Perceptual learning occurs through these senses although the first two are more directly concerned with learning skills gained in an academic situation (Lerner, 1976., Wallace & McLoughlin, 1975).

Problems which develop in perception are identified as auditory or visually receptive and/or decoding difficulties (Johnson & Myklebust, 1967., Myers & Hammill, 1976). Thus a child having visual receptive and decoding difficulties in discrimination and differentiation of symbols, for instance, will have problems in meaningful reproduction of these. Spatial relationships and combinations of letters to words, and words to

sentences as seen in context to other letters and words, will form part of the identification and discrimination procedure of perception. Also, perception of words as an entirety is a necessary additional skill to focusing on correct interpretation of reading and spelling words so that substitution of similar wording is not introduced. The recognition and understanding of letters and words in one form, combination or context to another context requires skills of association and an integration of acquired language experience.

Auditory misperception is an inability to discriminate between sounds, recognize and interpret what is heard. This affects the receptive and decoding abilities and also interferes with processes of acquiring reading and spelling skills. That is, the child may hear perfectly well, but not be able to correctly recognize or decode what was heard. Blending of isolated sounds into words may be problematic, or parts of words may be 'heard' but which do not make sense. Auditory memory disturbances of letter to word sounds and incorrect sequential order ability may also impede reading and spelling progress.

Visual and auditory perception both play a role in scholastic learning - in particular the reading and spelling skills.

2.1.4 IMAGERY/MEMORY

Imagery entails the formation of a mental picture according to Mann & Suiter (1975) which the child is required to recall and reproduce from information already perceived. It involves the retaining of

information "in sequence or out of sequence which has been heard, seen, felt for both long and short periods of time" (Mann & Suiter, 1975, p. 228). Johnson & Myklebust (1976, p. 33) describe imagery as pertaining "to sensation or information already received and perceived". It follows therefore that the child should first have become aware of what he is seeing, hearing or touching relative to ongoing situations, and then having to remember and recall at a later stage that which was perceptually experienced.

Imagery as discussed within the concept of a reading and spelling disability, covers two types of functions in this study, namely auditory and visual imagery (Johnson & Myklebust, 1967).

Auditory imagery is described as the reauditerization of sounds which call up a mental image (eg. pat) which the child relates to a part of a perceptual experience. This function aside from the ability to symbolize, or represent a word, (pat) in verbal language but forms part of the memory skill (Johnson & Myklebust, 1967). Therefore, difficulties in this area may be evident when the child is unable to associate what is heard in a sequence of sounds to the visual image of 'patting a dog'. The word 'pat' may in fact be heard quite differently as 'bat' and indicates an auditory language problem. In addition, the sequence of sounds may also be wrongly recalled as 'tap' instead of 'pat' (Mann & Suiter, 1975).

In visual imagery, the child reauditerizes the sounds, as described above, and visually remembers a picture or a concrete experience of himself patting a dog or whatever other related experiences are mentally 'seen' in his mind. The child mentally puts

together an image of this perceptualized experience so that he is in fact recalling aspects from memory of already perceived sensations (Johnson & Myklebust, 1967). When it comes to reading and spelling, faulty visual imagery may cause the child to have problems remembering how he saw the sequence of words, or being unable to recognize the same word in a different context (Mann & Suiter, 1975). It also follows that if the initial perception of letters of a word, sequence or association of letters in words is faulty there will be a visual image reproduced of the original faulty misperception of information. That is, the information initially sent to and received in the brain needs to have been adequately processed perceptually in order to be stored effectively for recall from long or short term memory (Johnson & Myklebust, 1967., Lerner, 1976., Myers & Hammill, 1976). The child with an imagery problem simply cannot recall or reproduce efficiently the correct aspects of a learning experience either from an auditory - visual association, or an auditory - auditory association (Johnson & Myklebust, 1967., Mann & Suiter, 1975).

Faulty understanding or misperception of auditory or visual aspects of verbal and non-verbal language associations affects the quality of the information stored in memory. Retrieval of information from short- or long-term memory is also an important function of imagery and is involved with and influences all aspects of learning (Johnson & Myklebust, 1967., Lerner, 1976., Mann & Suiter, 1975., Myers & Hammill, 1976).

2.1.5 SYMBOLIZATION

"Symbolization is a synonym for language in that a

symbol represents something in a way that provides the interpreter or learner with meaning at both verbal and non-verbal levels" (Mann & Suiter, 1975, p. 237). The child develops an ability to use written symbols meaningfully as either a form of outward or inner communication of words to effectively express ideas and thoughts to others, or within himself as inner speech (Myklebust, 1971).

There are two aspects to symbolization which are described as visual/auditory receptive and oral/motor expressive functions (Mann & Suiter, 1976). Decoding is the function of the first aspect and is involved with receiving of information through listening and reading. Problems experienced in this area can be found in a probability of inadequate interpretation of what is being seen or heard. If this is integrated with experiences and associations from previous foundations of language, further symbol development will be problematic.

Classification and association of symbols related to concrete experiences builds up a foundation of initial abilities which become effectively integrated into a tool of communication. Expressive language follows from receptive skills as encoded information. This is the ability to use symbols that describe the integrated experiences which have been assimilated, and then putting them into speech and writing. Disorders in this area may affect the ability to effectively perform the sequentially correct structural functions of language usage as expressed meaningfully in word and sentences. (Johnson & Myklebust, 1967., Myers & Hammill, 1976).

2.1.6 CONCEPTUALIZATION

Conceptualization is a thinking process employing skills of cognitive interpretation. It is dependent on the degree of functioning and integration of all the learning processes (Mann & Suiter, 1975). The three considered levels on which conceptual functioning basically occurs are the concrete, functional and abstract levels of thinking according to Lerner (1976) and Mann & Suiter (1975). Disturbance of any of these concept forming levels affect the verbal and non-verbal thinking skills (Lerner, 1976).

If the child is unable to deduce meaningful and accurate understanding from what is being heard or seen then selection of material may be inappropriate and insufficient for the required response level. It has also been stated by Lerner (1976) that not only meanings but implied meanings must be understood so that concept patterning can occur in selection of specific elements of information to form conceptual relations.

The efficient formation of the concrete level requires a certain amount of physical external experience and knowledge about the surrounding environment in order to form further functional concepts. From these ultimately the abstract level of ideas are formed which become necessary to complete the whole experiential process (Lerner, 1976). However, Lerner (1976, p. 287) states that problems may also occur at any of the levels of conceptualization as well as "confusion of attributes of an object with the concept of the object, concept of an object with its name" and multiple meanings of concepts.

Delayed or impoverished language experience may initially effect the adequacy of the stages of each level of concept formation and cause a disorganisation of experiential knowledge. As Lerner (1976) observed, this disability creates further intellectual and language deterioration as the child gets older.

2.2 GENERAL CHARACTERISTICS OF CHILDREN WITH LEARNING DISABILITIES WITH REFERENCE TO BLACK SCHOOL BEGINNERS

It has been suggested by Myers & Hammill (1976) that until the ambiguity of learning disability and psychological process terminology is more adequately defined, clinical criteria and characteristics of these disabled children would provide more acceptable identification for specific learning problem syndromes.

Myers & Hammill (1976) and Mann & Suiter (1975) both set out criteria which can form the basis of an inventory to isolate problems in reading and spelling. Myers & Hammill (1976) and Kaluger & Kolson, (1978) found in studies on behaviour of learning disabled children, that they tended to show certain clinically observable characteristics to a greater degree of deficiency than children with no problems. Mann & Suiter (1975) and Lerner (1976) seem to concur that certain behaviour patterns and learning styles are seen to be apparent in learning disabled children. These characteristics are intuitively experienced and noted by teachers and educators.

Professor M. Skuy of the University of the

Witwatersrand conducted a survey in 1987 the findings of which were discussed at a conference in Pretoria on Education for the Black disabled. Problems and disabilities identified by teachers and paramedical personnel on black children mainly in Soweto were isolated as being general difficulties in a learning situation. This group of children "evidencing problems in their classes" (Skuy, 1987, p. 60) were further evaluated by the use of a screening process. It was confirmed that most of "these children were experiencing severe or very severe difficulties with regard to reading, writing, spelling, arithmetic, language and relevant school-appropriate behaviour".

The 1969 Murray Report (De Lange Commission, 1981, vol. 8, p. 34) stated that 15% of the black school population to a greater or lesser extent required remedial assistance and in the case of serious environmentally deprived children the percentage is probably higher. The De Lange Commission (1981) states since then that the percentage of scholastically impaired children as being about 50%.

In fact, the identification of children with learning disorders is basically concerned with the pupil "whose achievement is not what it should be in the light of his achievement potential, i.e. according to his ability - his intelligence, sensory abilities etc" (De Lange Commission, 1981, vol. 8, p. 136). This underachievement factor is stated by the same Commission (1981) as being one of the criteria for identification of learning disabled children.

Underachievement also appears to be a widely accepted criteria which can be used as a tentative

identification tool that a pupil may have a potential learning difficulty. This provides a basis, at least, for further investigation of any problem which the child is scholastically experiencing (De Lange Commission, 1981, Myers & Hammill, 1976).

In addition, behaviour deviations which are conspicuous, are consistent with a child having learning problems. These can be seen as behaviour characteristics which a child continuously exhibits in the classroom, such as restlessness, overactivity, inattentiveness, disruptive influence. This maladaptive behaviour is recognized as a symptom of a possible learning problem (De Lange Commission, 1981., Lerner, 1976., Mann & Suiter, 1975., Myers & Hammill, 1976). It was found by Skuy (1987) that children experiencing some of these symptoms, such as inattentiveness, not being able to work independently, also experienced learning difficulties. It was also noted by the De Lange Commission (1981) that the scholastic problems experienced by white children appear on a larger scale amongst black children. This indicates that children generally exhibit similar symptoms of impairment and maladaptive behaviour when experiencing learning problems.

2.3

CONCLUSION

- Black school children are no different to other children in that they also have learning problems and although there is very little researched information on the extent and specific categories of this, we can assume the problems found are similar in nature to westernized school children (De Lange Commission, 1981., Herbst, 1982., Skuy, 1987., Webb, 1986).

- There seems to be no single definition for learning problems but the following basic psychological processes involve learning systems for all children - sensation, concentration, perception, imagery/memory, symbolization and conceptualization (Herbst, 1982., Hudson, 1975., Johnson & Myklebust, 1967., Murray, 1961., Steenkamp, 1971).

- General characteristics of children with learning problems is widely documented and accepted. However, little research has been done on learning criteria and behaviour characteristics of black school children with learning disabilities but it can be assumed from observations of the black child to be similar as that found in other cultures.

CHAPTER 3

LANGUAGE DEVELOPMENT

Interest in language development can be viewed by psychologists and educationalists as a background to understanding learning problems which children experience in scholastic environments.

That is, if the initial concrete experiences gained by the child during language development is faulty then the understanding of and subsequent reading of related symbols will be faulty. As Johnson stated in 1960, "reading is a symbol system twice removed from the realities which they represent", and if the problem exists in a developmental stage it is likely to affect later stages of language proficiency (Johnson & Myklebust, 1971, p. 48).

The integration of stages therefore need to be adequate, from an experience which is the first step to acquiring a language skill, and then taken to the auditory receptive stage which is the first symbol system to develop. (The child hears words describing experiences). The second symbol system is important to the development of an effective language system as a whole as the child is subsequently translating from the experience and first symbol system to culminate in the visual expression (reading and spelling). Myklebust's developmental hierarchy of man's language system in 1960 was thus considered in this research to be an important model upon which to base the discussion of development and acquisition of language skills .

It also provides insight into the language processes and underlying cognitive skills necessary for academic progress, and as Owens states (1984, p. 51) that "language development is parallel to cognitive development". Menyuk (1971) found

this to be a reasonable assumption and that the two functions come together in specific situations.

Language development functions concurrently with developmental stages of a child and can indicate or increase understanding of oral language areas which appear to be problematic (Owens, 1984). That is, by the time a child reaches certain age levels, the expected average language and cognitive levels should have been relatively developed. If the child shows a problem in a receptive (listening) or an expressive (speaking) ability, the eventual skill of reading, writing and integration of experiences will be disordered according to the degree of initial dysfunctional severity (Lerner, 1976).

3.1 DEFINITION

Myers and Hammill (1976, p. 392) define language as "an arbitrary system of vocal symbols by which ideas are conveyed". Owens (1984, p.3) specifies language as a "socially shared code or conventional system for representing concepts through the use of arbitrary symbols and rule governed combinations of those symbols". Myklebust (1955) describes language as symbolic behaviour which uses symbols as a way of communicating and expressing meaning to ideas, thoughts, feelings and objects. It is a system which uses symbols so that communication and sharing of experiences may take place. It involves not only the mechanical articulation of speech, or of writing but the comprehension, associative and expressive mechanisms essential to developing language skills and learning abilities (Hartstein, 1971).

3.2 THREE BROAD THEORETICAL APPROACHES TO LANGUAGE DEVELOPMENT

It is suggested by Spache (1976) and Wallace & McLoughlin (1975) that there are basically three broad theories on language development. They are behaviouristic, linguistic and developmental approaches.

Behaviouristic theory states that language is a learned behaviour and can be imitated and acquired by reinforcement factors within the environment. That is the verbal communication that occurs around him, enables the child to hear and repeat this, then his linguistic abilities are shaped in turn by the comments and reactions to his communicative processes. He then gradually acquires an internal individual language skill. Skinner proposed this behaviouristic model of language acquisition and development, and believed that the qualitative value of reinforcement from the environment were important factors on what he termed the development of verbal behaviour (Owens, 1984., Spache, 1976., Wallace & McLoughlin, 1975).

Chomsky, a linguistic theorist, proposed that language skill and development is an inherent instinctive ability. He believes that the child has a natural inborn ability to form language according to instinctively selective and universal inner rules (Wallace & McLoughlin, 1975). This ability in turn assists him in progressively conforming to the structure of language requirements and through which communication with his own world and the environment can occur. The child thus learns to understand and produce language by first developing verbal units from a syntactical type system of uttering, then to

form groups of words to the eventual placing of these words into meaningful ordered sentences. (Owens, 1984). Chomsky's grammarian theory therefore states that "linguistic units are learned in a previously arranged form before they are produced in phonetic detail" (Wallace & McLoughlin, 1975, p. 132). This approach does not consider the environment or cognitive growth as being important or influencing the acquisition of language, nor in turn does this theory of natural acquisitive occurrence of language explain the actual process of language development (Owens, 1984).

The third proposed theory is based on a biological developmental approach in which language develops and is learned by the child as the brain matures neurologically (Owens, 1984., Spache, 1976., Wallace & McLoughlin, 1975). This is also seen as being in conjunction with the general cognitive development of the child. Without the interaction of certain cognitive and developmental levels being reached as proposed by Piaget, the child would not be able to attain the required stages of progressive competency necessary for language ability (Myers & Hammill, 1976., Owens, 1984., Spache, 1976., Wallace & McLoughlin, 1975). As cognitive and language development continues, so does the composition from inner language to production of verbal behaviour progress.

It is noted in the three basic approaches and in other subsets of these theories which are not discussed, that attempts to explain the phenomenon of language acquisition and development is varied and indeed the study of this is a complex matter. How and why the rules for deciphering language symbols just happens (as it seems) to children over

a few short years prior to the formal teaching of this complex skill still appears to be debateable. (Kaluger & Kolson, 1978., Lerner, 1976., Mussen, Conger & Kagan, 1970., Myers & Hammill, 1976., Owens, 1984., Spache, 1976). However, parts of theories have been used generally to explain specific language development facts and stages of language learning. The sequence of these stages for acquisition of verbal behaviour thus appear to follow a general universal pattern which begins with a babbling stage at about three months to eventual and progressive phonological, syntactic and semantic development (Mussen, Conger & Kagan, 1970., Ohuche & Otaala, 1981., Wallace & McLoughlin, 1975).

3.3 MYKLEBUST'S THEORETICAL APPROACH TO LANGUAGE DEVELOPMENT

The developmental theory is seen to fit in with the work done by Myklebust in his diagnosis of deaf children and his remediation programmes of their language problems and learning disabilities. His research over 20 years led him to construct a theory which clarifies more effectively the connection between these earlier auditory disorders and learning disorders in children who are learning disabled. His starting point was that "semi-autonomous systems within the brain underlie and control the process of learning" (Myers & Hammill, 1976, p. 124., Johnson & Myklebust, 1967). He developed a concept that various systems in the central nervous system complement, interrelate or separately operate in an inter- or intraneurosensory functional learning process. That is, if information is processed through one of the sensory modalities such as the auditory system, then intraneurosensory learning occurs. This type of separate functioning

occurs infrequently. However in an impaired nervous system for example of blindness, the initial intra-neurosensory learning process may well function through the one auditory system, and then later develop into an interneurosensory experience of learning through touch and other sensory modalities. Sensory limitations in this case impede the integrative learning mechanisms of the semi-autonomous systems as a unit. Interpretations and identification of experiences may differ between the blind and sighted child but the resultant internalization of each one's experience has individual meaning to each child (Johnson & Myklebust, 1967).

Myklebust added a corollary to his theory, that multisensory "overloading" of information through more than one system at a time may interfere with the learning process. This would include interference of successful processing and integration of information for those children evidencing learning disorders (Myers & Hammill, 1976). He does however state that the psychological processes of perception, imagery, symbolization and conceptualization are likely to be disturbed if the central nervous system is dysfunctional (Myers & Hammill, 1976).

In order for an inter-neurosensory process to occur, he postulated that a channel for transporting and reproducing information from one system to another within the semi-autonomous system must be present. This he called a transducer system. He further states that the optimal integrative functioning of all these systems effectively influence the psychological processes of learning. He considers this functioning to be essential for the development of normal language (Johnson & Myklebust, 1967.,

Myers & Hammill, 1976). In 1960 he published a graphic description of a developmental hierarchy of language (Fig. 3.1). This follows a sequential pattern of experiential development from inner language to receptive to eventual expressive language.

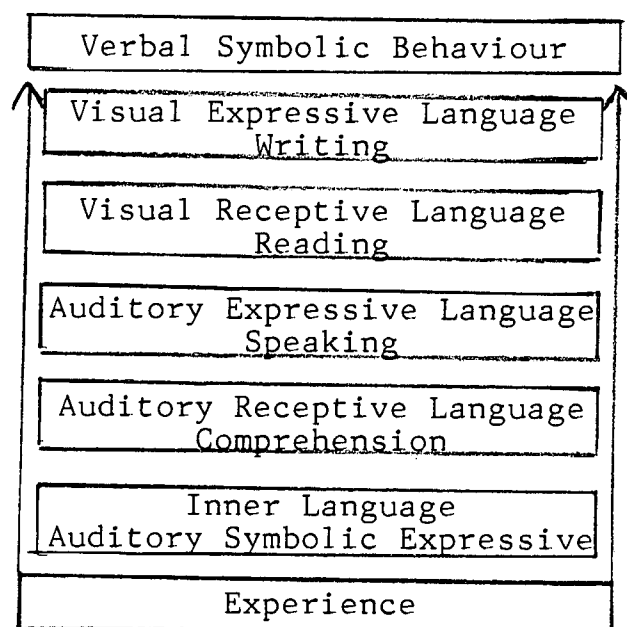


Fig. 3.1 Developmental hierarchy of man's language system (Myklebust, 1960, p. 232). Diagram taken from Myers & Hammill, 1976 p. 128.

3.3.1 INNER LANGUAGE

According to Johnson & Myklebust (1967), inner language is the foundation upon which meaningful receptive and expressive language can emerge. For a child, it is the first stage of becoming aware of the world around and forming simple uncomplicated concepts of these experiences. This stage gradually develops from simple to more complex relationships and associations between concrete experiences. The child for example becomes aware of persons and objects within the immediate surrounding and begins

to make certain inner associations with these. Gradually as the child becomes more mobile, the environmental sphere becomes larger and the awareness of the surroundings expand his concept formation (Mussen, Conger & Kagan, 1970). Units of experience become attached to verbal symbols initially, (sounds), which are further developed into words having acquired meaning and eventually form the inner language. This inner language is also described by Johnson & Myklebust (1967, p. 36) as "the language with which one thinks. Also, it is the native tongue."

3.3.2 RECEPTIVE LANGUAGE

Receptive language consists of two aspects - auditory and visual verbal behaviour (Johnson & Myklebust, 1967). Inner language is said to develop over approximately six to eight months according to Myklebust (1968) after which the child's understanding of experiences and the spoken word begin to be translated for him into a meaningful form of communication. This is known as auditory receptive language ability. That is, inner associations of experiences with the surrounding world of the child begin to be linked with verbal symbols that are heard and objects that are seen. He begins to know that everything is called by some name. Hence receptive language is the auditory intake and association of verbal symbols which become related to the objects and persons already experienced in his inner world (Johnson & Myklebust, 1967).

Cognitive development and simple conceptualization begin to develop as the child masters the receptive processes. These two processes - inner language

experience and auditory receptive language - become complementary to each other in that the child begins to understand the connection between the words he hears and the experience of his inner language. Eventually the two processes rely on integrative functioning so that when the child hears a specific word or group of words, or sees specific objects, persons or things, he will be able to understand and respond in a meaningful manner. Ultimately when the child reaches the formal school years, the verbal system of reading (the visual receptive language ability of linking symbols to meaning) is developed (Johnson & Myklebust, 1967).

3.3.3 EXPRESSIVE LANGUAGE

Expressive language consists of two verbal systems - talking and writing. Once the above two language processes are established, the expressive part of language appears as the child attempts to interpret his own meanings of experiences into verbal units of language. The degree and adequacy of this skill becomes dependent upon sufficient development and establishment of the initial receptive and experiential awareness abilities (Myers & Hammill, 1976). Myklebust also states that expressive language begins to emerge at about a year, a fact which is universally accepted (Mussen, Conger & Kagan, 1970., Myers & Hammill, 1976., Ohuche & Otaala, 1981., Owens, 1984). At this stage, the child will start to only use words that have meaning for him (Myers & Hammill, 1976).

Finally, symbolic behaviour follows a specific pattern of "overlapping developmental stages directly related to experience" and are not viewed "as mutually exclusive categories" (Myers &

Hammill, 1976, p. 127). Eventually, according to Myklebust's hierarchical system, the child will be able to understand and translate his experiences through the visual receptive skill of reading to expression of this in terms of ultimately communicating through written language. This stage brings the child into the formal learning years of school at about the age of five to six years (Menyuk, 1971., Myers & Hammill, 1976).

3.4.1 LANGUAGE DEVELOPMENTAL PROCESSES - FIRST YEAR

Language is accepted as a vital part of communication and many learning abilities are dependent on the adequate development of this skill. A discussion on language developmental processes provides insight into Myklebust's hierarchy of man's language system. Word meaning is only acquired once words are formed before they can be used as words in communication (Johnson & Myklebust, 1967., Lerner, 1967., Owens, 1984).

Mussen et al. (1970) discuss language development beginning with babbling and vocalization as being universal sound responses during normal infancy. At birth and for the first few months, basic sounds are related to crying and cooing. These sounds appear to be independent of the surroundings, as was confirmed by observations of deaf infants born to deaf-mute parents (Mussen, Conger & Kagan, 1970, p. 186). As the child develops biologically and matures neurologically, visual and auditory attention begins to increase and spontaneous babbling sounds start to emerge. These authors state that this reflects a processing reaction to the sounds that have been heard. In this stage, it is not necessary to have people around to babble at as

no communication is taking place other than a reflection and reaction by the infant to sensory stimuli. When vocalization and finally speech start emerging, exposure to and communication with people places meaning on the developing sound system.

However, it is not known whether the child distinguishes any difference initially between sounds, nor in fact what specific role babbling takes in language development (Menyuk, 1971., Owens, 1984). Menyuk (1971) in the same observation explores the possibility that the child learns to experiment and control the vocal mechanism and output of sound sequences. Imitation and reproduction of the sounds which have already occurred within the child's own babbling is said to be shaped towards further combinations of utterances. These in turn develop into clearly refined phonemes towards eventual articulated words (Owens, 1984). This appears to expand on Irwin's findings that by the end of the first year, the child is able to produce about 50% of the major phonemes and a few basic morphemes (Mussen, Conger & Kagan, 1970).

During this developing sound stage, Myklebust's description of inner experience and inner language is forming. Towards the end of the first year the child is beginning to extend meaning and organization to his world and the next phases of comprehension and audio-receptive and expressive language start occurring. The child thus requires more verbal scope for meaningful expression because of the widening environment he finds around, and his maturing cognitive abilities also begin to take on more depth (Lerner, 1967., Myers & Hammill, 1976).

3.4.2 - SECOND YEAR

Meaningful speech or expressive language typically occurs once syntactic production begins (Menyuk, 1971., Mussen, Conger & Kagan, 1970., Owens, 1984). During this period, the child develops at first, a repertoire of words that tend to encompass entire thoughts or meanings into a specific word. This development is establishing a basic association between words which will eventually take on a more defined syntactic development. While these words, and eventually groupings of words, may not be grammatically correct they create an adequate meaning and communication vehicle for the child. For example, if the child says "me digged" - it means a world of experiences to him even though grammatically incorrect. In addition he is communicating information to someone not as words to be imitated but as a message to be conveyed about his world.

Mussen et al. (1970) state that the average one to two year old child acquires a phenomenal increase in his spontaneous spoken vocabulary and his comprehension of words is more than that which he can express. This stage also centres on a period of cognitive development in which perceptual-motor activities provide a means to explore new situations which further increase the learning experience of inner language (Kaluger & Kolson, 1978., Mussen, Conger & Kagan, 1970., Ohuche & Otaala, 1981).

3.4.3 - PRESCHOOL YEARS

The preschool years generally refer to the age of between two to five or six years. This period shows further phenomenal vocabulary increases but with

greater efficiency, comprehension and control of the use of language (Menyuk, 1971., Owens, 1984). Mussen et al. (1970, p. 330) also state that "by the age of four most children have clearly mastered the fundamental rules of grammar." Because of the hierarchical nature of language development according to Myklebust, the language processes interlink and progress simultaneously as new experiences are internalized, comprehended and expressed to become verbal behaviour (Mussen, Conger & Kagan, 1970., Myers & Hammill, 1976).

Parallel to this language acquisition is the critical development of cognitive capacities of perception, thinking and conceptualization (Kaluger & Kolson, 1978., Mussen, Conger & Kagan, 1970., Ohuche & Otaala, 1981., Owens, 1984). Perceptual understanding and selection of sensory impressions support the child's language experiences and enable him to organize his thinking and conceptual processes (Mussen, Conger & Kagan, 1970). That is, as the child's cognitive abilities develop, so does he become more competent in recognizing, differentiating between and associating sounds, objects and persons to what he sees and hears around him. This capacity will influence the eventual skills and abilities required for effective reading and writing in the visual receptive and expressive stages of Myklebust's language system. This would mean that the child must first have understood and effectively used an oral language so that the symbols which are eventually read and written should correspond to his language experiences.

From this stage other capacities and skills develop such as the mental ability to handle ideas and to abstract. Should the foundation of one level be

impaired or dysfunctional in some way, the next and following stages of language processes will be inadequately integrated into the overall language system (Lerner, 1976., Myers & Hammill, 1976).

In addition to these skills being formed, appropriate emotional and social levels are also progressively maturing and are noted briefly as being included in the holistic picture necessary towards achieving reading and written competency (Kaluger & Kolson, 1978). That is, the child must also be emotionally and socially ready to cope with the requirements of formal learning situations in order to progress further.

3.5 BROAD OBSERVATIONS OF LANGUAGE DEVELOPMENT IN THE SOUTHERN SOTHO CHILD

When trying to evaluate learning disabilities in the Sotho child it should be established that their learning problems have not been caused by environmental, emotional, social nor organic factors. That these factors may contribute negatively to learning problems cannot be overlooked, and they create a complicated interplay between them in a scholastic situation. In this same context it is necessary to establish that the Sotho child has the skills and capacity to cope with academic learning and that the schooling facilities are adequate for his needs. All these evaluations, however, have their own special problems as shown in numerous investigations and research conducted in various areas of impairment amongst black children (Boykin, Franklin & Yates, 1979., H.S.R.C. Conference, 1987., Liddicoat, 1969., Ohuche & Otaala, 1981., Poortinga, 1971., Steenkamp, 1971., Wober, 1974). In addition, information has been

limited and relevant to selective areas, as is the one now being done in Kroonstad.

Over a period of meetings during June - August with three social workers and a community worker, discussions were held on motor development, observations of language characteristics and general social/emotional influences which have a bearing on the child's overall development. The following was stated as collective observations by the social workers of the people they had dealt with, and noted regarding the population of Kroonstad generally.

Motor development follows a pattern of movement from being in a prone position at birth to sitting assisted, then unaided at about seven to eight months. From creeping/crawling at about ten months to a year and walking unaided by about fifteen months. This is considered to be normal development.

The type of vocalization presented does indeed appear to follow a universal pattern as discussed above. Crying and cooing was evident in the first three months, the latter being sounds of a glottal nature as in an "ng" type Sotho language sound. From three months to a year, babbling occurred and apparently an introduction of phonemes and simple morphemes emerge. Labial sounds of "b" and "m" were noted. Vowel introduction such as "a" which Irwin¹ found in speech development research in Iowa to be a sound all infants made, was also present. Together these sounds were eventually refined into a small element of language such as in "ma", "mama". The labio-dental sounds of "f" and "v" mentioned by

1. Mussen, Congar & Kagan, 1970.

Mussen et al. (1970) as part of the repertory of sounds during the first year do not appear frequently in the Sotho language and may explain why the sounds were not noticed by the social workers and other persons (teachers and clinic sisters).

Sotho children also have postdental sounds of d, t, n, stated by Mussen et al. (1970, p. 189) as part of universal sound patterns "dependent primarily on maturation and changes in anatomical neuromuscular systems". That is, as the child developmentally moves from a prone position to a sitting or upright position, so the shape of the oral cavity and tongue positions move from glottal to a labial and dental expressive change of sounds (Mussen, Conger & Kagan, 1970). This was found to be present in the sounds made by Sotho children in Kroonstad. The full range of sounds emerging during the babbling stage was not researched. This was not considered as necessary other than to note a universal similarity to language developmental patterns which would seem to indicate general systematic acquisition of verbal behaviour.

The social workers considered that the child had frequent opportunities to babble, test own sounds and towards the end of the first year begin articulation of recognizable and simple word sounds. It seems that these children receive much social stimulation and emotional nurturing from care-givers and an extended family system. Sociability seems to be highly valued and considerable time is said to be spent playing with and talking to the infant. It is not known what the qualitative value is of the freedom and spontaneity of 'frequent opportunities to babble'. These 'opportunities' could be termed as

social encouragement to imitate and reproduce that which is already in the infants' repertory of sounds. However, the practising and testing out of sounds probably happens either on waking or before sleeping or during times when the child is traditionally being 'back-carried' by the mother or care-giver. It seldom happens that the child is left alone, but it is not known whether this significantly has a bearing on babbling as a developing sound system. (Menyuk, 1971., Owens, 1984).

It is also not known whether Irwins' findings in 1969 (Mussen, Conger & Kagan, 1970) would apply, that 50% of the major phonemes are produced by the end of the first year as no known research is available. It would seem reasonable to suggest though, that Myklebust's description of inner experience and inner language occurs during this first year and extends into the audio-receptive and expressive phases of language development in the second and following preschool years. This is based on further discussions with teachers of primary schools, crèche's, play schools, educare and early learning centres in the Cape, Orange Free State and Bophuthatswana¹. The qualitative value of discussions held regarding the acquisition of language and learning skills was inadequate.

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1. Principals and teachers of the two research schools in Kroonstad., Black municipal crèche teachers - Kroonstad., Social workers and Clinic sisters in Kroonstad., Personnel at Athlone College of Education., Clinical psychologist at Valkenberg, Cape Town., Early Learning Resource Unit - Viljoenskroon., National Organizer of Early Childhood Education for the Republic of Bophuthatswana.

3.6

CONCLUSION

- Learning disorders are identified in areas in which language is involved. It is also understood that language plays a part in acquiring learning skills and that deficiencies which develop in language acquisition can be analysed so that learning disorders can be better understood (Lerner, 1976., Menyuk, 1971., Myers & Hammill, 1976., Myklebust, 1965 and 1975).
- The child without learning disorders seems to follow a relatively normal pattern of language development (Menyuk, 1971., Owens, 1984., Wallace & McLoughlin, 1979).
- It is also noted that language development follows a universal pattern and that the black South Sotho child appears to acquire verbal behaviour in terms of Myklebust's hierarchy of language (Liddicoat, 1969., Mussen, Conger & Kagan, 1970). However, further stages of visual receptive (reading) and visual expressive (writing) language behaviour systems for South Sotho children seems to be a problem. When word meanings have to be translated from unsophisticated mother tongue environmental experiences into formal scholastic experience the child shows signs of poor language development and learning skills appear qualitatively inadequate (H.S.R.C., 1987).

CHAPTER 4

EMERGING CONSIDERATIONS RELATED TO LEARNING PROBLEMS EXPERIENCED BY BLACK SCHOOL BEGINNERS

It was found from a survey conducted by Skuy (1987, p. 58) that some of the problems and disabilities which were identified amongst black intellectually impaired children in Soweto may also be relevant to this study. They are -

- "environmental deprivation - such as malnutrition and inadequate conditions.
- poor language skills.
- visual and hearing difficulties.
- few teachers kept formal records of their children in their classes."

Identification of scholastic impairment and remedying the disabilities were undertaken by the teachers on an informal basis, according to Skuy (1987). This was also found in Kroonstad. Although the teachers were extremely sympathetic towards and willing to try supplementary aids in reducing learning problems, their understanding of the manifestation of these disabilities was confined to their own untrained informal experiences of teaching.

However, from research discussions in the black community of Kroonstad, many teachers, parents, social workers, medical and paramedical persons and community workers regarded through their own experiences that the identifying causes of some of the learning difficulties were confirmed by Skuy's investigation (H.S.R.C. Conference, 1987). Their observations are treated with caution as the criteria for the informal

investigative discussions was based on questions relating to educational difficulties (specifically reading and spelling problems) being experienced by black pupils.

The available literature on relevant learning disabilities of the psychological processes¹ experienced by black school children is mainly drawn from research done with black societies in other areas. It is not intended that this study introduce cross-cultural comparisons by using developmental theories in a cultural context. There may well be cultural differences in developmental emphasis between black ethnic communities, such as motor skills, as expected by traditional rural societies compared to the same more westernized urban society. To avoid construing these comparative differences as labelled developmental differences, they may according to Berry, Dasen and Witken (1979), Adler (1982), Cole and Scribner (1974) be considered as culturally relative to the population being investigated. Therefore a set of concepts and inferences can develop from the experimental and non-corroborated data which is collected from this research. This is intended as a contribution towards broadening the assessment of certain scholastic aptitudes and psychological processes of the Sotho child in a Sotho cultural context.

4.1 PERCEPTUAL DEVELOPMENT OF THE BLACK CHILD

Perception is an auditory and/or visual process. The auditory process functions in areas of figure-ground, closure, discrimination and localization. The visual process encompasses figure-ground, closure, spatial relations and discrimination areas (Lerner, 1976). Problems in these areas affect basic scholastic learning, particularly reading and

1. cf. Chapter 2, Sect. 2.1.

spelling skills (Mann & Suiter, 1975., Wallace & McLoughlin, 1979).

There is a minimum amount of information available on the auditory and visual perceptual problems encountered by black school children in the Republic of South Africa. However, general learning criteria and behaviour characteristics of children and specifically black school beginners with learning disabilities appears to be similar. (H.S.R.C., 1981).

An informal battery of tests is being used in some schools in the Republic for identification of these problems and is known as the Bridge Class Screening Test Battery (BSTB). It draws up a profile of a black child's abilities which are considered important for effectively coping in a learning situation. Two of the six sub-tests are of interest in this study as they indicate that some research has been undertaken in the preparation of the tests to identify disabilities in auditory and visual perception. Although this is not formally standardized material, nor fully documented, it would seem to be of benefit for teachers to determine practically the learning difficulties and disorders experienced by their pupils and is cost effective. It could also add to information in further research (Soshanguvu College for Continuing Training).

4.1.1 AUDITORY PERCEPTION

The following auditory perceptual processes can be categorized into sub-groups:

- Auditory figure ground - It is important that the child fix his attention to what the teacher is

saying and that other irrelevant auditory stimuli is ignored (Mann & Suiter, 1975).

- Auditory localization - Some children may be disturbed by the source or direction of sound and this may also interfere with attention (Mann & Suiter, 1975).
- Auditory closure - blending of sounds into words (Mann & Suiter, 1975).
- Auditory discrimination - ability to interpret differences and similarities of sounds effectively (Mann & Suiter, 1975).

4.1.2 VISUAL PERCEPTION

Visual perceptual processes are concerned with the following sub-categories:

- Visual figure-ground. The child appears to be inattentive but in fact has a problem visually distinguishing specific information from the general background (Lerner, 1976).
- Visual closure. This ability relates to the retention of letter images in units which make up meaningful words. Children with problems in this area cannot fill in parts of words in spelling or reading (Lerner, 1976).
- Spatial relations is seen as the understanding of the position of pictures, or letters as in reading and spelling, and seen in relation to other pictures/letters around it (Lerner, 1976).
- Visual discrimination problems occur when the

child is unable to distinguish differences or similarities between letters.

4.1.3 DEPTH PERCEPTION

Hudson (Duncan, Gourlay & Hudson, 1973, p. 6) found "that competence in the perception of three dimension in pictures was a learned process, and that by the end of primary school, most white pupils were competent". His comparison with unacculturated groups led him to conclude in the same investigation that "neither constitutional endowment nor educational level could account for the problems of pictorial depth perception". Mundy-Castle (1966, p. 7) in a study of the same problem in Ghanaian children, supported Deregowski's experiments with Zambian children that "cultural stimulus is critical for the development of pictorial depth perception". It is also considered a probability that depth perceptual ability develops normally with the influence of scholastic factors and that increased visual stimuli on a structured formal basis may correct culturally deprived environments (Duncan, Gourlay & Hudson, 1973, Herbst, 1982).

4.2 OTHER FACTORS TO CONSIDER

The following problems related to learning disabilities are not well documented for black school children and will be noted as factors which need to be considered when a child is having learning or scholastic difficulties.

4.2.1 SENSATION

Sensation involves basic sense modalities which receive information through sensory stimuli and

which is then processed in the brain. Visual and auditory acuity as noted in Section 2.1.1 above is a basic modality for acquiring information, and teachers in black schools are not equipped to identify problems in this field unless the impaired modality is obvious (H.S.R.C., 1987).

4.2.2 CONCENTRATION

Concentration focuses on consistent visual and auditory attention, and effectively maintaining this while information is being processed in the brain. Insufficient information on this process is documented for black children. However, factors such as malnutrition could affect the levels of concentration and attention necessary for effective learning to occur (H.S.R.C., 1981).

4.2.3 IMAGERY

Imagery is associated with three memory processes of receiving, storing and retrieval of information. It involves skills of association, sequencing and categorizing of stimuli and information through an auditory/visual medium. Problems encountered in visual and auditory imagery may be related to various factors such as limited learning experiences found in a deprived environment (Wober, 1975) or to poor language skill development (H.S.R.C., 1987., Webb, 1986). Lower income and lack of access to pictorial materials (magazines, books) may minimize the potential for memory associations to develop effectively until the child reaches formal school. By this stage there may be serious gaps in the child's understanding of language (Duncan, Gurlay & Hudson, 1973). In this regard, there is no research available on black children.

4.2.4 SYMBOLIZATION

Symbolization is the usage of letters and words to decode and encode verbal and non-verbal information into a meaningful form of language¹. Duncan, Gourlay & Hudson (1973, p.8) state that the Western use of pictorial symbolism is extensively used as a synonym for language and that "this type of symbolism presents difficulties to unacculturated groups". No research is available in this instance for black children.

4.2.5 CONCEPTUALIZATION

Conceptualization is a thinking process on concrete, functional and abstract levels, and is dependent on the successful integration of all previously mentioned levels of learning processes².

Research on the effects of the conceptualization process on academic learning by black children is not known. However, from the discussion of Myklebust's developmental hierarchy of man's language system the following may be suggested as relevant when considering this process.

Concrete words which are associated with daily experience by the child and form part of inner language and receptive language will probably be easier to understand when these words are later heard and seen in formal learning situations (Johnson & Myklebust, 1967). The functional use of these words in sentences makes it necessary for

1. cf. p. 14

2. cf. p. 16

linguistic word meaning to be understood. The abstract understanding of the words also requires extended knowledge of the concrete experiences (Wallace & McLoughlin, 1979). By determining the concept level of the black child, the teacher can relate this information to the level of problems being experienced. There is no research available for black children.

4.2.6 LEARNING READINESS AND ENVIRONMENTAL INFLUENCES

It is taken as a universal observation that a child will 'normally' perform certain tasks within its specific age domain¹. It is also seen as an indication that this developmental sequence or phenomenal time of appearance of skill related functioning is either impaired, or under-developed for various reasons if this step-wise sequence does not occur. However, Flowell and Wohlevill (1969), Pascual-Leonie (1975), Case (1974), Cole and Scriber (1974) in Adler (1982, p. 6) suggest from their observations that "characterization of a person's developmental status on the basis of experimental performance is debatable even when the research is entirely intracultural". Then, if a child is not 'ready' for school, based on a test of readiness, it could be for reasons other than developmental immaturity. It can be evidence rather of a potential learning disability, especially if the mental age appears to be quite adequate². In fact, if the child does not measure up in performance to the expected age level as required by the ASB test battery, it is

1. cf, Chap. 3.

2. H.S.R.C., 1981, vol. 5., and H.S.R.C. Conference, 1987.

a possibility that the child may be ready but requiring more specific remedial-type assistance other than enrichment or auxiliary-type school work. The ASB battery includes criteria of cognitive aspects related to developmental processes in the Sotho child and judges the non-verbal level of competency underlying operations across a range of tasks attainable by the child at the time formal education is to commence (South African H.S.R.C., 1979).

In addition, this competency may be influenced but not caused by the deprived and impoverished environment which may stunt the adequacy of learning skill processes needed to be acquired prior to the child reaching school-going age (Bakara, 1970., Biesheuvel, 1943., Kaplan, 1972). The following was obtained as back-ground information on the environmental situation of Maokeng and its residents. The records kept at the Kroonstad/Maokeng Municipal offices in August showed that about 9,600 families existed on a family income of lower than R600-00 per month. Family composition was mainly a patriachal extended system with about three to seven persons per family unit. The income of about 2,500 families is more than R600-00 per month. Residential stands have 7,100 homes built, 850 families building on the available self-help schemes, 850 families officially waiting for one or other reason to commence building. Overcrowding is evident. Job opportunities are taken up in the Kroonstad and Maokeng area. It was also found from the same source that two thirds of the child population attend various schools - registered crèche's and farm schools, primary and high schools and a Technical centre. The teacher/pupil ratio appears to be reasonable in the high schools though perhaps problematic in the primary schools.

It was found that the residents of Maokeng are traditionally gregarious and spend little time on reading for pleasure so become unfamiliar with language skills (confirmed by Webb in 1986). Some of the leisure time amenities available to the community are mainly utilized by the higher economic income bracket and the professional family, as observed by community, religious, social and clinic workers. These include the use of library centres. TV and music centres, community halls for films, ballroom dancing, concerts, choir performances and educational venues for upgrading work classes. As noted above, the majority of persons cannot afford these amenities and also have little time available in which to economically provide the necessary stimulating material for the benefit of their children. This together with social problems of overcrowding, poverty, malnutrition and a related alcohol abuse according to discussions held with social and community workers, creates further difficulties for a positive learning environment (De Lange Commission, 1981, vol. 10., Ohuche & Otaala, 1981). These additional problems may thus compound the learning disorder, and the situation therefore does not provide a climate for sufficient development of concrete experiences within the child's immediate living world¹. Although amenities are available, social conditions qualitatively affect the acquisition of experiences, and may account for restricted perceptual skills (Duncan, Gourlay and Hudson, 1960., Grové, 1982., Poortinga, 1971). It has also recently been established that environmental impairment contributes to a child's learning problems (H.S.R.C., 1987).

1. cf. Chapter 3

4.2.7 POOR LANGUAGE SKILLS

From a recent conference on the Role of Language in Black Education (Webb, 1986), reading and spelling problems experienced by black children were found to be affected by social factors, and was independently comparable with the findings of this research¹. Language skills as seen in context with Myklebust's approach², are severely restricted by the lack of opportunity to experience new words, their meanings and the relation of these symbols to ideas. The formal expressions of language in speech and later in reading become relative to experience, and the conceptual structure of the written word in a series of symbols may be meaningless to some children (Webb, 1986). Duncan, Gourlay and Hudson (1973) found that the use of symbolism used extensively in the Western culture (a medium of education for the black child) as a synonym for language, was found to present difficulties to unacculturated groups.

1. cf. Sect. 4.1.

2. cf. Chapter 3.

CHAPTER 5

THE ASB TEST AS AN EVALUATION INSTRUMENT

The Standardized Aptitude Tests for School Beginners (ASB) is used to evaluate school readiness, and may also have the potential to predict the existence of learning disorders in reading, spelling and scholastic achievement (South African Human Sciences Research Council, 1979).

It was felt that the ASB battery could be useful not only as a readiness test, but also as a screening instrument to predict reading and spelling disabilities amongst black school children. If these disabilities are identified early in the child's scholastic career, adequate measures can be taken to correct this and thus enable the child to cope more effectively in learning situations (H.S.R.C., 1987). As this test battery is already being used, and the application of the ASB is part of the Department of Education and Training annual programme of orientation training for Sub A teachers, a comprehensive remedial strategy from the results can be prepared to fit the needs of a learning disabled child, if it is useful.

Two validity studies of the ASB have been reported. A study by Hoar in 1982 was conducted in Gazankulu and the second investigation was done by Owen and Swanepoel in 1985 based on a representative sample of school beginners in Bophuthatswana. "The simple and multiple correlation investigation revealed that the majority of the correlations lay between 0,30 and 0,49" (Owen & Swanepoel, 1985, p. 26). The results of the latter report concluded that the "pupils who passed Grade 1 performed significantly better in the subtests of the ASB than those who failed Grade 1. The ASB, therefore, has the potential to distinguish between successful and unsuccessful pupils" (Owen & Swanepoel, 1985, p. 25). However, the validity of the ASB test for South Sotho school beginners is

not known. It was decided that the ASB could have predictive validity in identifying not only school readiness, successful/unsuccessful Grade 1 pass rates but also be used as a predictive instrument for learning problems.

The following is a short summary of the rationale of the individual sub-tests as set out in the ASB manual.

- TEST 1 - PERCEPTION

The purpose of the test is to identify an ability to visually discriminate similarities and differences between four pictures and a given test picture. The child is asked to recognize and differentiate what is seen. "This ability is essential for reading and writing ability" (ASB manual, p. 3).

- TEST 2 - SPATIAL

This test examines an ability to visually perceive the positions of two pictures to each other. It requires the matching of a test picture to one other picture as seen in a different rotated position. It becomes necessary that the child mentally re-arranges the pictures and understands the different positions which the images show in the pictures, the space around them, and how they relate to each other. This ability is necessary "for general success at school" (ASB manual, p. 3).

- TEST 3 - REASONING

Items in this test have to be selectively chosen which have certain qualities in common and are apart from one dissimilar picture. Cognitive interpretation is required as well as the understanding of implied meanings of concepts in the pictures. This ability of conceptualization is seen as part of the learning process.

- TEST 4 - NUMERICAL

The test indicates an ability to express concepts and ideas in terms of a number system such as quantity, size, space, distance and order. The test implies the ability necessary to understand instructions related to this system and to express the subsequent functions into an associated written or verbal numerical symbol system. Myers & Hammill (1976) confirm that a numerical system consists of two aspects - one related to a language symbol system and the second related to quantitative thinking expressed in numerical terms.

- TEST 5 - GESTALT

This test "is important with a view to instruction in reading and writing" (ASB manual, p. 4). It tests the ability to perceive an object in its entirety while also being aware of the details that complete the whole (Lerner, 1976). i.e. A whole word is seen when reading or spelling, and in addition, the detailed letter for letter which makes up the word is perceived as it differs from other words. Concentration and visual imagery are also important in recognizing association and sequence of letters in words, and words in sentences. Figure-ground perception and spatial relationship abilities are also tested - necessary processes for reading and spelling.

- TEST 6 - CO-ORDINATION

This test is relevant to the study, only insofar as it involves visio-motor skills and motor maturity - "abilities which are essential for writing" (ASB manual, p. 4).

- TEST 7 - MEMORY

Visual memory and the quantitative amount of recall is

tested. Information from pictures has been perceived while the child was doing sub-tests 1 - 6 and should have been mentally stored for later recall. The test analyzes the subsequent retrieval and reproduction of this information.

- TEST 8 - VERBAL COMPREHENSION

Myklebust's Auditory Receptive Language - Comprehension¹, is seen in accordance with Thurstone & Thurstone (1963) as being auditory comprehension of spoken descriptions of specific pictures.

This test measures an ability to comprehend specific words which are read out to the child and is an important skill necessary in learning a language. "According to Lenneberg in 1970 it seems that this is more important in the development of a language in a child than the ability to verbalise thoughts through sounds" (Manual for ASB, 1979).

1. Fig. 3.1.

CHAPTER 6

RESEARCH METHOD

The following aspects are discussed in this chapter:

- Main research and operational hypothesis
- Selection of subjects
- Design
- Definition and measurement of variables
- Procedure - administration of five tests
- Analysis of data.

6.1 THE MAIN RESEARCH AND OPERATIONAL HYPOTHESIS

Research is conducted to assess reading and spelling dysfunctions, among South African South Sotho school beginners by means of the ASB test. The following nul hypothesis is formulated thus -

- The ASB does not significantly indicate reading and spelling dysfunctions among six to eight year old South Sotho school beginners.

The alternative hypothesis is stated as follows -

- The ASB significantly indicates reading and spelling dysfunctions among six to eight year old South Sotho school beginners.

6.2 SELECTION OF SUBJECTS

The population chosen for research was school beginners from the black community which was situated on the north-west side of the town of Kroonstad - called Maokeng. It is approximately 1150

ha. in size and has a black resident population of about 66,000. As this population is predominantly South Sotho¹ (40,085), it was decided to conduct the research within this ethnic group.

The age range for sub-standard A school beginners in South Africa is six to eight years old. Officially this is stated as being that the child has already turned five in the latter six months of the year preceding school entrance. Only sub A children in two schools would take part in the research, and would involve a homogeneous group of South Sotho male and female children.

Between the two schools a large sample would provide a fair representation of the South Sotho sub A population, and minimize the effects of nuisance variables or the contamination of the dependent variable.

Two out of the eleven primary schools in the Kroonstad/Maokeng municipal area were randomly chosen from a list obtained from the Department of Education and Training. Four schools have a woman principal and seven are headed by a man, therefore Likubu School with a woman principal and Moepeng School with a male principal were randomly chosen from the list. The total number for the sub A classes of both schools was 254. Likubu - 173 and Moepeng - 81. The two schools are within a two km. distance of each other.

6.3 DESIGN

This study was done by means of *expost facto*

1. cf. Sect. 4.2.6.

research. The ASB test was conducted at the beginning of the year and the evaluation of reading and spelling aptitudes at the end of the year. The ASB scores were then analyzed for their ability to predict learning (reading and spelling) dysfunctions.

6.4 DEFINITION AND MEASUREMENT OF VARIABLES

6.4.1 DEPENDENT AND INDEPENDENT VARIABLES

- Independent variables -

As the purpose of this study is to predict reading and spelling problems among South Sotho school beginners the eight subtests of the ASB will be used as independent or predictor variables.

- Dependent variables -

Furthermore, there are two dependent or criteria variables identified for this study, namely reading and spelling abilities.

The procedures of measurement of the above mentioned variables will be discussed in Section 6.4.4.

6.4.2 NUISANCE VARIABLES

Certain criteria were considered necessary in order to deal with extraneous variables which may affect the dependent variable in the research. That is, scores from the reading and spelling tests could be affected by factors other than a dysfunction of psychological processes. These various factors which could contaminate the dependent variable are discussed in the literature as academic learning

ability, organic problems, school readiness, disadvantaged or deprived children, and the effects of formalized education on the black child.

6.4.2.1 ACADEMIC LEARNING ABILITY

It is important to accept that the child in the research group has at least an ability to cope within a relatively expected average academic age level. The Cattell Culture Fair test, Scale 1, sub-tests 1, 3, 4 and 8 was used as a broad cut-off point of selection for children having a score of 80 and above¹. This test was considered as a reliably fair and comparatively culture free assessment of academic potential. It is reasonable to suggest that these children will therefore have the potential to mentally achieve scholastically.

6.4.2.2 Organic problems, or physically handicapped children were excluded from the research as this factor could also confound the scores obtained in the reading and spelling tests. This was done by examining the biographical information contained in the school records of the research group.

6.4.2.3 Readiness. It was assumed that those children who were accepted into school at Sub A level were supposedly considered as academically mature and ready to cope with formal learning. This supposition appears to concur with observations and findings by Owens (1984) and Menyuk (1971). If the child however was not socially, emotionally nor academically mature but had been accepted for school, then such immaturity or non-readiness is expected by the

1. cf. sect. 6.4.4.3

teaching personnel to be relatively if not completely overcome by the end of the school Sub A year. The research tests of reading and spelling were for this reason conducted at the end of the pupil's Sub A year.

In addition, preceding the latter tests, it was monitored by the researcher during the year that Threshold (1981) and educational skills and techniques programmes were introduced to both schools. The Threshold book is familiar to all the teachers and is part of the syllabus for up-grading non-readiness problems in these Sub A children. In Kroonstad, a trained black teacher circulates and guides the class teachers in all the black primary schools in the administration and use of educational programmes. The quality of each teacher and school attitude towards the use of these supplementary programmes for developmental maturity could not be controlled so that one school, or even one class may have benefitted more than another from the enrichment or experience gained out of these aids. However, all Sub A classes were required to have completed and reached a certain standard of readiness proficiency by the end of the academic year. Therefore, non-readiness in the initial entry into school is not being taken as cause for dysfunction of psychological processes.

- 6.4.2.4 Disadvantaged or deprived children. The population sample included a wide cross section of the South Sotho ethnic group as was discussed in section 6.2. Therefore the large number of children chosen were representatives of a broad economic spectrum.
- 6.4.2.5 Formalized education. It was not possible to minimize the effects of a bicultural educational system on the black child, many of whom initially

found the formality of learning to be strange. This however should have corrected itself by the end of the year when reading and spelling tests were done.

6.4.3 SELECTION CRITERIA

According to the above mentioned the criteria for the group in which learning problems was to be tested were as follows:

- Cattell "g" score above 80
- Physically handicapped excluded
- School beginners, age six to eight years
- Sub A pupils
- South Sotho ethnic group
- Male and female pupils

6.4.4 MEASUREMENT OF VARIABLES

6.4.4.1 CONTROLLING THE RELIABILITY OF THE ASB SCORES

The ASB test battery is a standardized test and the value of this as a predictive instrument for assessing reading and spelling dysfunctions is to be researched. The general reliability of tests 1, 2, 3, 4, 7 and 8 have been indicated according to the Kuder-Richardson formula 20, and tests 5 and 6 according to Fergusons adaptation of the K.R. formula 20 as being generally satisfactory (ASB manual, p. 43, 44, 1980). The rationale of the tests, and the evaluation of the relativity of the battery as a predictable instrument for reading and spelling dysfunctions was discussed in Chapter 5.

The current 1987 year pupil intake at Likubu and Moepeng schools were not tested with the ASB within the prescribed norm period of four to six weeks of the first term of the academic year. This was due to

staff shortage, unrest which occupied the time of the normally involved department Circuit Inspectors, and the delayed permission to conduct the tests.

The ASB test and procedure of administration was never-the-less familiar to the various teaching persons at the two schools. As required by the Department of Education and Training an orientation period from the 9th to the 13th of February, 1987, for training of Sub A teachers in administration of the ASB testing was in fact still attended by all relevant school staff in the community. This is an annual practice and teachers are given a uniformly thorough grounding in ASB test administration, according to the Assistant Director of Education in Kroonstad.

However, standardized scores for "school readiness" as evaluated according to the ASB rationale in the ASB manual (1979, p. 1) are not in question in this research. At the time of administration of these tests, the two schools had completed the required departmental work on a programme outlined in "Threshold- a School Readiness Programme" (1981). This programme is used to supplement learning areas in which necessary academic skills may not have been sufficiently developed by the time the black child actually starts school. It has therefore been taken that at the time of testing the raw scores obtained, although not within the prescribed time period of standardization, will still be of significance to this research.

Contamination of raw scores could have occurred as a result of the difference in time between orientation and eventual administration of the ASB tests. However, readiness efficiency could have improved,

but as stated in Section 6.4.2.3, readiness levels are not being taken as a cause for disorders of basic psychological processes. The staff were also familiar with the rationale and procedure of testing and the elapsed time probably had a minimum effect on the scores.

An effort was made in both schools to eliminate as much variance as possible in all testing situations and this would also minimize and reduce inter-teacher differences, i.e. 'own' class room environment as constant conditions for all pupils, and a strict adherence to testing instructions by the teachers. The same teachers were involved in testing throughout the research.

6.4.4.2 MEASUREMENT OF CHILDRENS' READING AND SPELLING ABILITIES

To measure the reading and spelling abilities of the subjects, a reading test and a spelling test were administered at the end of the first school year.

Questionnaires on reading and spelling difficulties according to the definition of the Mann & Suiter inventories (1975) was also drawn up to evaluate the validity of the reading and spelling tests. The correlation between the questionnaires on reading and spelling difficulties, and the reading and spelling tests will indicate the degree of validity of the latter tests.

To test the reliability of the reading and spelling test scores, a re-test of reading and spelling was administered two days after the initial test was conducted in October/November. A random selection of ten children for reading and ten children for

spelling were chosen. The same procedure was followed for testing as was done under the conditions of the initial testing situation. The scores can be considered as relatively stable and consistent if the correlation between these re-test scores and the original scores of the same 20 children are high.

The construction of the different reading and spelling questionnaires and tests is to be discussed next.

A - CONSTRUCTION OF A SPELLING TEST

As there was no available test, a graded spelling list was extracted from "Thahameso" - a Southern Sotho reader for Sub A pupils. All the words in the entire book (chapter 1, p. 1 - chapter 33, p. 37) were listed and the frequency noted. The total listed words were 335.

Each word was then summarized per chapter from highest to lowest frequency of occurrence throughout the book, eg. chapter 1, p. 1 "a" was introduced and occurred 101 times throughout the reader, "leke" was only introduced in Chapter 1 therefore as the least frequent throughout the reader it was not included as a spelling word. The separate words "le" and "ke" which occurred frequently were used in the reading inventory. Also from chapter 4, p. 4, "bana" has the highest frequency of 35, with "ba" on its own from chapter 3, p. 3 occurring 121 times. Frequencies lower than 'seven' for spelling were not taken into account as these words appear to not only occur less often but also are introduced towards the end of the reader.

Twenty four words were selected thus for spelling, per frequency and graded also according to introduction of sounds and word per chapters (Annexure 2).

B - CONSTRUCTION OF A READING TEST

There was also no available reading test . The same list of 335 words as defined above for the spelling procedure was used in compiling the graded reading list.

Forty four words were selected according to frequency per page, chapter and the introduction of vowels and consonents. Consideration was given to high frequency of words which were also used frequently in combinations throughout the reader, eg. "le" chapter 1, p. 1, frequency of 58, "ke" in the same chapter had a frequency of 82, therefore included as a combination "leke" in the reading list. Bearing in mind the frequency and introduction of vowels and consonents, words with similar configurations were also included, eg. "nama" and "mane", "fula" and "hula", "bina" and "binela" (Annexure 3).

C - CONSTRUCTION OF A QUESTIONNAIRE ON READING AND SPELLING DIFFICULTIES

In order to test the validity and reliability of the reading and spelling tests, a list of questions to assess reading and spelling difficulties was compiled from the Mann & Suiter inventories (1975). The Questionnaire, "spelling and word reading errors to look for" was structured in English, into a set of specific

questions according to the Mann & Suiter programme (1975, p. 18, 20, 31, 119 and 120). The words were adapted to the structure of the South Sotho language, i.e. the problem words were in Sotho.

The inventory is made up in two parts and is an individual questionnaire which the relevant class teacher answers about each child in the research group. The spelling inventory section consists of errors which can be due to auditory and visual discrimination problems, and the word reading inventory section also sets out problems primarily due to auditory and visual discriminatory difficulties. In compiling the inventory, discussions were held with the various teaching personnel concerned in a similar manner as described in the Cattell adaptation below. The Questionnaire was finally sent as requested, to the Department of Education and Training in Pretoria and approval for administration was received (Annexure 1).

6.4.4.3 OBTAINING SUBJECTS' CATTELL "g" SCORES

To apply the selection criteria mentioned in section 6.4.3, it was necessary to obtain the Cattell "g" scores of the subjects. To achieve this, it was necessary to make use of an adaptation of the Cattell Culture Fair Intelligence Test.

A pilot investigation for the suitability of the Cattell test as an evaluation of potential "g" factor ability was first conducted, as it appeared that no other suitable tests were available. In October prior to the research being conducted, various discussions were held with the two

principals, Sub A teachers and Circuit Inspector of Psychological Services concerning a possible form of IQ testing suitable for Sub A black children in the Likubu and Moepeng primary schools. It was decided that an experimental IQ test on a random group of Sub A children from the two schools be given. The Cattell Culture Fair Intelligence Test, Scale 1, sub-test 1,3, 4 and 8, administered as a group test, was decided on as being reasonably free of culture contamination.

In the experimental administration of the tests, wording of picture concepts would be noted accordingly to the understanding of such pictures in a Sotho context. Extra time was also to be given in sub-tests 1 and 3. i.e. sub-test 1 has a time instruction per the Cattell manual (1973, p. 6) of "80 secs. This test 1 was increased by 10 secs. to 90 secs. from the word "go ... stop". Sub-test 3 was given an extra 30 secs. from "90 secs." to 120 secs. In this particular test it was mutually found to be the experience of those with whom the discussion was being held, and from their direct observations of children that the ASB sub-test 6 co-ordination test was a problem for most of these school beginners. Sub-test 4 and 8 have no time instruction and would be given according to the instructions in the Cattell manual.

Further discussions on the above were held at the two schools and the offices of the Department of Education and Training (DET), in Kroonstad. Dates on which to conduct the experimental Cattell tests were set to suit the two schools. More discussions on the matter of pupil selection and manner of administration of the tests were held and the following was decided on and implemented, prior to testing:

LIKUBU SCHOOL -

- the six Sub A teachers were each to randomly choose three poor, three average, three above average pupils in each of their respective classes. Total pupils were 54.
- The principal would then randomly choose from these four poor, four average and four above average pupils. Total pupils for the experiment were 12. Testing was given in October.

MOEPENG SCHOOL -

- This school has three Sub A teachers, and the same procedure as for Likubu school was followed. Total pupils were 27.
- Further random selection by the principal gave a total of eight to participate in the experiment. Testing was done during October.

In both schools, test instructions were given by the researcher through one pre-selected and briefed teacher acting as an interpreter. The tests other than above modifications were given according to the manual of instructions.

Purpose of the adaptation -

- To ascertain whether or not the children could understand the 'vernacular transcription' of instructions describing the tests' picture concepts - already decided on as per discussion noted above .
- If there was a significant problem encountered

during testing then the envisaged research administration and ultimate scoring of the Cattell could be culture contaminated and irrelevant.

The following was found -

1. Test 1 - no apparent problems in either school.
2. Test 3 - as for Test 1.
3. Test 4 - item 3, word "bush" better understood as "tree" in the Sotho vernacular.

item 7, general problem with the concepts of "cherry" but decided to leave it as a 'difficult' word.

item 8, word "pitcher" changed to "jug" and word "bottle" changed to "medicine bottle".

item 9, word "armchair" changed to "sofa".

item 11, word "automobile" changed to "motorcar", "railway engine" changed to "train", "motorcycle" changed to "motorbike".

4. Test 8 - no apparent problems in either school.

- The researcher 'scored' the tests, raw scores and Mental Age and without passing on this information, confirmed except in one case the teachers initial observations which had been

stated prior to the test, i.e. poor, average or above average.

- These results are pertinent to the research only to expedite the setting up and taking of the Cattell so that the scores can be used as a very broad cut-off guide to evaluating "g" before administering the ASB Test.
- Further discussion with the study supervisor at the University of the Orange Free State confirmed the alteration of instruction words as stated above for the items in sub-test 4 of the Cattell Culture Fair Test.

6.5 PROCEDURE

6.5.1 ADMINISTRATION OF CATTELL-SCALE 1

During the second week in March, the relevant Sub A class teachers from the two schools were briefed on the changed instructions and administration of the Cattell test. The same teachers were already familiar with testing procedures, and there appeared to be no problems.

The test was administered as a group test.

Test instructions and administration was done in the South Sotho vernacular by the teacher of each respective Sub A class. The total number of children being tested was 254. The seven teachers were issued with amended instruction books¹, and the test books in which biographical data had been completed per child by teachers, principals and the help of the researcher.

1. Sect. 6.4.4.3

Testing commenced according to the Cattell manual of instructions and amendments by the researcher in the first week of April. Time where indicated in sub-tests 1 and 3 were strictly adhered to. The total testing time including the instructions took about 25 minutes.

Test books were collected and scored by the researcher.

6.5.2 ADMINISTRATION OF THE ASB TEST

Testing was conducted during the last week in April at Likubu School, and the first week in May at Moepeng School according to the test manual 1153 PBV. In both schools the test was applied over two days, sub-tests 1 - 4 on the first day, and sub-tests 5 - 8 on the second day, as recommended in the manual of instructions. The total testees were 254.

Testing was monitored by the two Circuit Inspectors for Psychological Services, both principals and the researcher.

Biographical data had been completed before administration of the tests.

Testing commenced at 09h00 until 12h00 for both schools on both days. Test books were collected and scored by the researcher.

6.5.3 ADMINISTRATION OF QUESTIONNAIRE ON READING AND SPELLING DIFFICULTIES

The Questionnaire (Annexure 1) was individually evaluated. The researcher recorded the responses by

the teacher to the Questionnaire and each child's workbook was also used as a guide to answering the specific questions in the spelling portion of the test. Each child was also asked to read two or three selected words taken from the Questionnaire and which also appeared in his/her workbook.

A 'yes' tick indicated a problem.

Testing commenced from the middle to the end of August for both schools.

6.5.4 ADMINISTRATION OF THE SPELLING TEST

The tests were conducted as group tests and administered in both schools during the last week of October and first week of November.

Testing conditions were the same in both schools as for approved end of year school examination procedures. Each child was given a test sheet (Annexure 2) on which biographical data had been completed. The relevant teachers had been briefed by the researcher and principals prior to testing commencing.

The teacher instructed the children in the vernacular that they were doing a spelling test and stressed that "even if you cannot spell a word you should put down every sound you can think of in the word". Then ... "next to No. 1, write ... (spelling word)", repeating the word once without breaking up the syllables. Reasonable time was allowed per word.

The teacher completes the list irrespective of whether or not all the children appear to be completing the list.

The papers were collected and scored by the researcher. Only correctly spelt words were scored one point.

6.5.5 ADMINISTRATION OF THE READING TEST

The reading test is an individual test and commenced from the first week in November.

Testing conditions were the same in both schools as for end of year examination procedures. Biographical data was completed on each test sheet (Annexure 3). The relevant teachers were instructed on administration of the test by the researcher and principals prior to testing. There was no time limit.

Each teacher writes a replica of the words as is acceptable practice in end of year examinations, onto a sheet of paper. The child is instructed in the vernacular to look at these words and read as many as possible, starting at no. 1, and reading across the line. "Go onto no. 2 do as many as you can". The teacher ticks (✓) the words on the child's test paper and writes a dash (-) on the word not read. When the child is unable to read four words consecutively the teacher ceases testing.

Test papers were collected and scored by the researcher. Words ticked "correct" upto the four 'dashes' (-, -, -, -) were scored one point each.

6.5.6 TEST RE-TEST OF SPELLING AND READING

A random number of ten children were selected one week after the original spelling test was conducted. One child was absent on the day of the re-test and

was therefore excluded from the overall research. The spelling lists with the completed biographical information were given by the researcher to one of the test teachers. Test conditions were the same as for the original spelling test, and the completed papers were collected and scored by the researcher.

A second random number of ten children were also selected to do a reading test one week after the original test was conducted. The tests with completed biographical data were given by the researcher to one of the test teachers, who completed these lists with the relevant children according to the same testing conditions as previously conducted. The researcher collected and scored the papers.

CHAPTER 7

ANALYSIS OF DATA, RESULTS, DISCUSSION

7.1 ANALYSIS OF DATA

As mentioned earlier, the purpose of this study was to evaluate the validity of the ASB as a predictor of reading and spelling dysfunctions.

To achieve this goal, the following procedures were followed:

- the Cattell Culture Fair Scale 1 was administered according to the procedure outlined in section 6.5.1. To evaluate the reliability of the obtained scores, ten tests were randomly selected and sent to the University of the Orange Free State for 'blind' scoring. These scores were correlated with the original scores.
- The ASB test administration followed the procedure outlined in section 6.5.2. Random selection of 12 tests for reliability evaluation was followed as for the above mentioned Cattell Scale 1 tests.
- These two tests were administered to school beginners at the beginning of the academic year.
- Selection criteria were applied at this point in which information obtained from the Cattell test with children showing a "g" score of below 80 were excluded. From the biographical information on the ASB test for each child, further criteria selection was made - physically handicapped children were excluded as were those under/over the age of six to eight years.

- At the end of the same year, spelling and reading tests were given to the population group of school beginners in the normally accepted manner applied by the two schools for the end of year examinations, and as set out in sections 6.5.4 and 6.5.5.
- Prior to performing this however, it was necessary to first evaluate the reliability and validity of the reading and spelling tests.
- The Questionnaire was administered as indicated in section 6.5.3 to the population group from the middle to the end of August. The correlation between the scores obtained and the scores evaluated for the spelling and reading tests indicates the degree of validity of the latter two tests.
- The spelling and reading test/re-test was conducted with a group of ten randomly chosen children for each test. These were administered in both cases one week after the original tests were given. The correlation between the two sets of scores for both spelling and reading tests will indicate the degree of reliability of the original tests' scores.

7.2 RESULTS

7.2.1 SUBJECTS

Two hundred and fifty four South Sotho, male and female Sub A children from two randomly chosen black primary schools in Kroonstad initially took part in the project. Ninety four children were excluded according to the selection criteria at the

completion of the Cattell Scale 1 and ASB test, i.e. children under a "g" score of 80, physically handicapped and under or over six to eight years of age. Four children were not present at the spelling test administration at the end of the year, therefore 156 children completed the project.

7.2.2 VALIDITY AND RELIABILITY OF TESTS

7.2.2.1 VALIDITY OF THE SPELLING AND READING TESTS

The results of the correlation between the scores obtained from the Questionnaire on reading and spelling, and the reading and spelling test scores was as follows:

The correlation between the scores of the spelling Questionnaire and spelling Test was 0,45 ($p < 0,01$). The correlation calculated between the two is therefore a reasonable indication that the Test is evaluating spelling abilities for South Sotho school beginners.

The correlation of the scores calculated for the reading Questionnaire and the reading Test was 0,63 ($p < 0,01$) and is a significant indication that the test for assessing reading ability among South Sotho school beginners is valid.

It is therefore considered that the spelling and reading tests are appropriate and valid for testing reading and spelling dysfunctions among South Sotho school beginners (Table 7.1).

	Spelling Questionnaire	Reading Questionnaire
Spelling Test	0,452	0,518
Reading Test	0,509	0,632

Table 7.1 Matrix of Correlation co-efficients between Spelling and Reading Tests - and Spelling and Reading Questionnaires.

7.2.2.2 RELIABILITY OF SPELLING AND READING TESTS

The correlation calculated between the first administration of the spelling test and the second identical test given one week later was 0,81 with a probability level of $p < 0,01$.

Similarly in the test-retest reliability score obtained for the two reading tests, the product-moment correlation score was 0,95 with a probability level of $p < 0,01$.

In both instances it is seen that the scores obtained by the population group in the spelling and reading tests are significantly reliable as seen in Table 7.2.

<u>SPELLING</u>		<u>READING</u>	
Test	Re-test	Test	Re-test
12	19	1	0
0	1	0	0
12	11	21	23
4	5	2	10
7	15	0	0
10	17	18	26
11	13	21	22
4	7	19	21
9	20	20	22
		22	20
N = 9	r = 0,81	N = 10	r = 0,95

Table 7.2 Product-Moment correlation co-efficients between Test-Retest scores obtained from Spelling and Reading Tests.

7.2.2.3 RELIABILITY OF CATTELL & ASB SCORES

The correlation co-efficients obtained for 'blind' scoring of the ten Cattell Scale 1 scores is calculated as 0,96 ($p < 0,001$). For the 12 ASB 'blind' scores, the product-moment correlation between the scores was calculated as being 0,94 ($p < 0,001$). Both tests indicate a high degree of reliability in the scoring of the tests.

7.2.3 MULTIPLE REGRESSION RESULTS

The following hypothesis is formulated thus:-

The ASB significantly indicates reading and spelling dysfunctions among six to eight year old South Sotho school beginners.

This hypothesis can be statistically stated as follows:

$$H_0: R = 0$$

$$H_1: R \neq 0$$

where R is the multiple correlation between the subscales of the ASB and pupils reading and spelling scores.

A stepwise multiple regression analysis according to a standard SPSS programme was conducted to determine which of the 8 ASB sub-tests yields the best prediction of reading and spelling dysfunction (Nie, 1983). In a stepwise analysis procedure the variables with the highest discriminatory value are included and those variables which are not significant below the limit of 0,05 are discarded. The results of the analysis is shown in Table 7.3.

	ASB 1	ASB2	ASB3	ASB4	ASB5	ASB6	ASB7	ASB8
ASB1	1.000 .999	-.317 -.001	.075 .449	.157 .112	.089 .369	.091 .359	.059 -.551	.072 .467
ASB2	.317 .001	1-000 -999	.173 .078	.281 .004	.433 .000	.212 .030	.011 .909	.084 .398
ASB3	.075 .449	-.173 -.078	1,000 .999	.300 .002	.139 .168	-.043 .661	-.231 .018	.306 .002
ASB4	.157 .112	-.281 -.004	.300 .002	1.000 .999	.357 .000	.221 .024	.110 .265	.288 .003
ASB5	.089 .369	-.433 -000	.139 .160	.357 .000	1.000 .999	.393 .000	.107 .279	.069 .488
ASB6	.091 .359	-.212 -030	-.043 .661	.221 .024	.393 .000	1.000 .999	.057 .564	.048 .631
ASB7	.059 .551	-.011 -909	.231 .018	.110 .265	.107 .278	.057 .564	1.000 .995	-.183 .063
ASB8	.072 .467	-.084 -398	.306 .002	.288 .003	.069 .488	.048 .631	-.183 .063	1.000 .999
TSPEL	-.037 .708	-.219 -025	.062 .530	.411 .000	.250 .010	.128 .197	.089 .369	.105 .291
TLEES	-.065 .511	-.127 .199	.062 .534	.413 .000	.259 .008	.156 .114	.059 .555	.181 .066

Table 7.3 Correlation co-efficients between the ASB 1-8 subtests and Spelling and Reading Tests. The significance of the correlation co-efficients is given directly below the co-efficients.

The formula obtained from the multiple regression analysis is of the form:

$$Y = a + b_1 X_1 + b_2 X_2 + \dots + b_8 X_8$$

where Y is the predicted score (reading and spelling scores), X is the ASB score of a pupil and b and a are constants.

The results for predicting pupils' spelling scores from their ASB scores is shown in Table 7.4.

Only ASB 4 was selected in a stepwise procedure as a significant predictor of spelling scores.

Multiple R	0,41079				
R Square	0,16875		DF	Sum of squares	Mean square
Adjusted R square	0,16060	Regression	1	876,52147	876,52147
Standard error	6,50618	Residual	102	4317,69969	42,33039
		F = 20,70667	SIGNIF F = 0,0000		

Table 7.4 Results of the stepwise multiple regression analysis in predicting pupils' Spelling abilities from their ASB scores.

The regression formula for predicting spelling scores from the ASB4 is as follows:

$$Y = bx + a$$

$$= 1,46 x + 4,3 \quad \text{where } Y \text{ is the spelling score and } x \text{ is the ASB4 score of the pupil.}$$

The results for predicting pupils' reading scores from their ASB scores is shown in Table 7.5.

Multiple R	0,41266				
R Square	0,17029		DF	Sum of squares	Mean square
Adjusted R square	0,6216	Regression	1	2943,04729	2943,04729
Standard error	11,85681	Residual	102	14339,56809	140,58400
		F = 20,93444	SIGNIF F = 0,0000		

Table 7.5 Results of the stepwise multiple regression analysis in predicting pupils' Reading ability from the ASB scores.

Only ASB4 was selected as a significant predictor of reading scores. The regression formula for predicting reading scores from the ASB4 is as follows:

$$Y = bx + a$$

$$= 2,67 + 6,25 \text{ where } Y \text{ is the reading score and } x \text{ is the ASB4 score of the pupil.}$$

The results suggest in both cases that there is a possibility that the ASB4 scores of children may give an indication of a probable learning dysfunction and not only as an indication of school readiness for the black school beginner.

7.2.4 DISCUSSION

From the results it can be shown that the ASB4 sub-test can be used as a probable predictor of reading and spelling problems among South Sotho school beginners. To evaluate this statement the following aspects must be noted.

- As a whole, the ASB battery of tests measures mainly the non-verbal abilities of school beginners. The ASB8 sub-test measures a possible element of auditory comprehensive skills necessary within a learning situation, and indicates that the pupil may have a problem in the first symbol system (auditory receptive stage¹).

- If one analyzes the psychological description of reading and spelling according to Johnson and Myklebust (1971) - that reading and spelling is a second symbol system which is twice removed from experience - then it can be suggested that the only sub-test which measures a part of this cognitive function is the ASB4 - even though it is associated with a numerical symbol system.

- It can be assumed with reasonable certainty that in cases where a pupil's non-verbal ability is ready, his verbal ability is approximately the same. That is the reason why the use of the non-verbal problem solving school readiness tests are applied at the start of formal education, as the pupil has not yet been exposed to visual symbol systems at this stage. This takes place effectively only from the second and third quarter of the Sub A year and therefore cannot be tested until this point has been reached. But the outcome of the readiness test (ASB) does not automatically state that the child will or will not have problems in the language areas of reading and spelling, as these tests do not evaluate the pupil's visual ability in a second

1. cf. Chapter 3.

symbol system in which reading and spelling is represented ¹.

- It can therefore also be assumed that even though a pupil's non-verbal ability is intact, it does not necessarily imply that the scholar can cope with the visual symbol system (reading and spelling). Thus the ASB ² which is a non-verbal test with the probable exception of the ASB4, cannot be used to predict learning problems.
- The difference between non-verbal readiness and reading and spelling readiness can be clearly illustrated by various researchers who have investigated research data. They have come to the conclusion that correcting perceptual-motor abilities (non-verbal) of learning-disabled children does not necessarily imply an improvement in reading and spelling abilities, (Myers & Hammill, 1976., Wallace & McLoughlin, 1979).
- Therefore, on the whole the ASB tests do not seem to adequately predict learning problems among South Sotho school beginners.

COMMENTS

- Other observations and information concerning the research must also be noted, as it is felt that this has a distinct bearing on factors influencing the rate of scholastic achievement experienced by South Sotho Sub A children. These are that difficulties in differentiating sounds such

1. cf. Chapter 4.

2. cf. Chapter 5.

as "h" or "j" for "sh", "g" for "kg", "wo" for "ho" were evident and could suggest a problem in the first symbol system (Auditory receptive). Also noted were omissions of sounds in the middle of words such as "bobe" for "behobe". Difficulties in visual presentation of letter sequence was noted as in "hea" for "hae", "aek" for "kae", or the usual letter reversals of t, j, p, q, b and d, as well as reversals of numeral presentation, such as 2, 4 and 7. It was also worth noting that "a" and "d", "n" and "h", "u" and "y" letters were often confused in writing and subsequent spelling of words were thus incorrect. These observations tend to exhibit universal characteristics of learning disabilities.

RECOMMENDATIONS

In the investigation for the predictability of learning problems for black school beginners, the following aspects have been revealed and can be investigated further by theorists and researchers.

- With the exception of the ASB, there is to date no standardized measuring instrument to determine intellectual ability and scholastic aptitudes among black primary school scholars.
- Characteristics of learning problems among black school beginners need to be identified and defined.
- Although the field is exceptionally broad, the influence of deprived environmental experiences on the scholastic achievement of the black school beginner require specific clarification.

SUMMARY

The purpose of this investigation was to conduct a theoretical study on the psychological processes of learning problems experienced by black school children, and to investigate if the ASB has the ability to predict learning problems among black school beginners.

The description of the psychological processes was based on the definition proposed in 1968 by the National Advisory Committee on Handicapped Children. In addition to this definition it was considered pertinent to the study that the De Lange Commission statement reported in 1981 on learning disorders also be included.

It was found in the literature that the dysfunction of psychological processes exhibit universal symptoms and that although there is little information available on the problem, black children are no different to other children in that they also experience learning problems.

This fact assumes that the universal criteria for average or above average intellectual ability is met, that primary problems of emotional disturbance or physical handicaps are excluded, and that environmental factors are seen as contributory aspects of learning difficulties rather than as creating dysfunctional psychological processes. These processes are hierarchically categorized in the following terms - sensation, concentration, perception, imagery/memory, symbolization and conceptualization. They are also not considered as mutually exclusive groupings.

An additional problem developed in that a minimum amount of information regarding dysfunctions of psychological processes among black South African children is available and information is mainly drawn from research done in this regard with black societies in other areas.

Language development plays an important role in acquiring learning skills and according to the analysis of various language theories, a reasonable assumption appears to be that a relatively normal pattern of language development indicates fewer learning problems. It was noted however that the black child is coping with the vernacular language at an un-sophisticated level because of the lack of visual stimuli, such as books, magazines, recreational activities, and that this may qualitatively affect the initial formal scholastic experience of school beginners. From various discussions with personnel in educational fields, the black child's mother-tongue language development appears to be normal in that the child goes through the normal stages of acquiring language. But the probable incompleteness of language development experiences mean that the child's environmental observations limit the adequate completion of the various hierarchical developmental steps needed in order to have a firm base for effectively functioning psychological processes to operate.

In the research, 254 South Sotho children initially took part in the experiment. Selection criteria were applied, such as intellectual ability, exclusion of physically handicapped, six to eight year old Sub A male and female children, and apart from four absentees at the end of the year, 156 children completed the research.

Administration of the following tests were given to the population sample. An adapted form of the Cattell Culture Fair Scale 1 test, the ASB tests 1 - 8, a Questionnaire on reading and spelling and finally at the end of the school year one spelling and one reading test. The status of the tests was regarded as satisfactory. All testing was controlled and monitored by the researcher and trained teaching personnel.

An ex-post facto design was used and a multiple regression stepwise analysis evaluated the data obtained from the tests.

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ANNEXURE 1

QUESTIONNAIRE ON SPELLING AND READING DIFFICULTIES WITHIN A LEARNING SITUATION WHICH ARE OBSERVED BY THE TEACHER

A. SPELLING INVENTORY

	Yes	No
<u>Auditory errors</u>		
1. Does the child substitute t for d	_____	_____
2. Does not hear differences between sounds eg. bobe for boh <u>o</u> be	_____	_____
3. Confuses vowels eg. bale, bela	_____	_____
4. Hears the beginning and ending of a word, but not the middle, eg. b...a for bana	_____	_____
5. Guesses, with little or no relationship between dictated word and spelt word	_____	_____
<u>Visual errors</u>		
1. Gives the correct letters in wrong order, eg. laka for kala, aek for kae	_____	_____
2. Reverses letters or words, eg. for s b for d el for le	_____	_____
3. Mirror images letters, eg. and (p,q) and (m,n)	_____	_____
4. Invert letters, eg. w for m as in ama u for n as in b <u>o</u> na	_____	_____

B. READING INVENTORY

	Yes	No
<u>Auditory errors</u>		
1. Does the child know letter names, but not sounds	—	—
2. Guess at words	—	—
3. Substitute a word similar to reading word	—	—
4. Knows the sounds but problems blending eg. b-o-n-a does not say <u>bona</u>	—	—
 <u>Visual errors</u>		
1. Is the child a slower than class average reader	—	—
2. Does not discriminate fine difference between letters, eg. reads bana for bala	—	—
3. Adds sounds to words eg. nama-ne for nama	—	—
4. Pronounced hesitation in sounding words	—	—
5. Does the child appear to memorize sentences, or parts thereof	—	—

(Procedures of Questionnaire taken from Mann, P.H., & Suiter, P. (1975). Handbook in Diagnostic Teaching: A Learning disability approach. Boston: Allyn & Bacon Inc. Mann - Suiter Developmental Inventories, p. 18, 20, 31, 32, and adapted to the needs of the South Sotho language)

ANNEXURE 2

SPELLING TEST

Instructions

A. At the top of the page, write the following:-

1. Name of child
2. Name of school
3. SSA
4. Date of test
5. Tester

B. Say to the children:- (when ready to commence testing)

"This is a spelling test. Listen very carefully and write each word next to a number. Even if you cannot spell a word, put down every sound you can think of in the word. Do as many as you can."

"Start with no. 1 - the word write it down"

- | | |
|------------|---------------|
| C. 1. e | 13. noha |
| 2. a | 14. rata |
| 3. bana | 15. bohobe |
| 4. ha | 16. sekolo |
| 5. ya | 17. bashemane |
| 6. bona | 18. dikgomo |
| 7. dila | 19. bela |
| 8. ho | 20. hula |
| 9. namane | 21. hae |
| 10. ja | 22. mme |
| 11. lekala | 23. moshe |
| 12. mahe | 24. patsi |

ANNEXURE 3

READING TEST

Instructions

The words on this list are to be written on the chalk board in exactly the same order - starting at no. 1 from left to right, proceeding to no. 2 until the list is complete (This is done before testing commences).

Fill in the following information:-

1. Name of child
2. Name of school
3. SSA
4. Date of test
5. Tester

Say to the child:- (when ready to commence testing)

"This is a reading test. Look at the words on the chalk board, and starting at no. 1 - read as many words as you can on that line. Then go on to no. 2 ... Do as many lines as you can".

(✓) words that are correct; (-) words not correct

STOP reading test if -, -, -, -, (4) in a row.

- | | | | | |
|-----|--------|--------|----------|---------|
| 1. | leke | kala | bale | nama |
| 2. | mane | bina | madila | lomo |
| 3. | molomo | fofa | maeba | fula |
| 4. | hula | binela | qala | dijo |
| 5. | dipodi | lerumo | sekolo | tima |
| 6. | wela | yena | bolaya | shwele |
| 7. | shapa | kgomo | hlaha | mmini |
| 8. | sakeng | ngaka | monna | kwana |
| 9. | nyala | ntwa | lwana | morwesi |
| 10. | phala | thipa | tlala | pitsa |
| 11. | ntja | tjale | ngwaneno | qhalasi |