CHAPTER TWO

REVIEW OF LITERATURE

2.0   INTRODUCTION

This chapter opens with the historical background of Down Syndrome and types of Down Syndrome under the mental retardation group. Also the language acquisition of Down Syndrome children is discussed.

The next section deals specifically with communication that is the nature and the development of communication and language. Language and its components are elaborated further.

The third section focuses on children with mental retardation, the communicative skills of children with Down Syndrome, language characteristics of children with Down Syndrome and communicative difficulties of children with Down Syndrome.

Finally this chapter discusses the models of language disability, the intervention programmes and the behavioral approach to language.

2.1   HISTORICAL BACKGROUND OF DOWN SYNDROME

According to the American Association of Mental Retardation in Owen, Bernstein, and Tiegerman (1992:82) "Down Syndrome is a genetic disorder caused by the presence of a 3rd 21st "chromosome". It is a genetic condition resulting from the presence of all or part of an extra 21st chromosome. Down syndrome is characterized by a combination of major and minor abnormalities of body structure and function. Among features present in nearly all cases are impairment of learning and physical growth, and a recognizable facial appearance usually identified at birth. Many other organ systems may be affected as well. It is named after John Langdon Down, the British doctor who first described it in 1866

2.2   THE PHYSICAL MENTAL AND SOCIAL CHARACTERISTICS OF DOWN SYNDROME

According to Amar Singh HSS (1993:2) the common clinical features for the Down Syndrome or Trisomy21 child are paraphrased as below:

Muscle Tone: Less muscle tone (hypotonia) and therefore tend to be a bit "floppy" and loose-jointed. This improves with age and is seldom a problem.

Head: The back of the head (occiput) may appear less prominent than usual, and the head tends to be a bit smaller than average. The soft spots (fontanels) may be large and later in closing than usual.

Eyes : The eyes tend to slant upward (slanting palpebral fissures). There may be small folds of skin at the inside corners of the eyes (inner canthal folds). These folds, which occasionally occur in normal babies, tend to become less prominent in later childhood. The

outer portion of the iris of the eye may be speckled with lightly colored spots ("Brushfield spots"), especially noticeable in blue-eyed babies.

Ears: Simple or aberrant helix formation noted. Ears are small and may lack normal cartilage, usually low set dysplastic ears. Usually experience conductive deafness, 60 % middle ear dysfunction and only 24 % normal hearing.

Nose: The nose tends to be small, and the bridge of the nose somewhat low, so that, from a profile angle, the face appears relatively flat.

Mouth : Although the tongue is of normal size, the mouth may be relatively small and the roof of the mouth a bit short; for this reason and because of generally poor muscle tone, the tongue of a baby with Down Syndrome may intermittently protrude. In older children with Down Syndrome a furrowed tongue sometimes develops. Their lips chap very easily out-of –doors.

Teeth: Small and abnormally shaped. They may come in late and occasionally are placed in an unusual position. Sometimes one or more teeth are missing. Tend to have fewer cavities than other children.

Voice : The voice may have a slightly deep quality in early to late childhood. Onset of speech is generally late, and learning to talk articulately is generally difficult.

Neck : Loose folds of skin across the back of the neck which becomes less prominent with time.

Heart: In about 40 percent of children with Down Syndrome a defect in the development of the heart is detected at birth or shortly afterward. In about half of these children the severity of the defect leads to an early death.

Hands: The hands often appear small, with relatively short fingers. There may be a single crease across the upper palm instead of the more usual two. The fifth finger may be

somewhat short and may have only a single crease on it. The tip of this finger frequently turns inward toward the other fingers (clinodactyly).

Feet : There may be a small gap between the first and second toes with a short crease running up between them on the sole of the foot.

Skin : The skin may have a mottled appearance and may become somewhat dry as the child grows older.

Speech : Speech produced has infantile omissions and substitutions.

Neurological: Mental retardation with IQ 20-75 (mean 50). Poor fine and gross coordination.

Children with Down Syndrome usually experience developmental delays, speech difficulties and mental retardation.

2.3   TYPES OF DOWN SYNDROME

According to Crawfurd, M.d' A. (1993: 8), in about 95 per cent of the children with Down Syndrome there exists a third chromosome 21 and in 5 per cent of the extra chromosome that is present is in a structurally abnormal chromosome or only found in some of the cells.

A variety of karyotypes all resulting in trisomy for chromosome 21 have been described by Crawfurd, M. d' A (1993 :9). They are :

2.3.1   STANDARD TRISOMY 21

The great majority of children with Down Syndrome have a full trisomy 21; that is three number 21 chromosomes are present in every cell. The cytological abnormality in Down Syndrome with an independent extra chromosome 21 in all the cells studied is known as standard trisomy 21. In the majority of cases, studies on both parents showed a normal chromosome constitution. These cases are often due to errors of chromosome separation during gene cell production. Trisomy 21 is caused by a meiotic nondisjunction event. A normal gamete (either egg or sperm) has one copy of each chromosome (23total). When it is combined with a gamete from the other parent during conception, it has 46 chromosomes.

However, with nondisjunction, a gamete is produced with an extra copy of chromosome 21 (the gamete has 24 chromosomes). When combined with a normal gamete from the other parent, the child now has 47 chromosomes, with three copies of chromosome 21. This is the cause of approximately 95 per cent of observed Down Syndromes, with 88 % coming from nondisjunction in the maternal gamete and 8 % coming from nondisjunction in the paternal gamete.

2.3.2   TRANSLOCATION DOWN SYNDROME

The normal number of chromosomes is found in about 3.5% of children with Down syndrome. When the chromosomes are analysed, it is found that an extra chromosome 21 is present, but it is stuck on to another chromosome instead of being independent. Chromosomes in which material has been transferred from one chromosome to another are known as translocation chromosomes.

2.3.3 MOSAICISM AND SECONDARY DOWN SYNDROME

In some patients, with Down Syndrome and also in some mild cases, it has been found that there is a mixture of cells with normal chromosomes and with standard trisomy 21. This phenomenon is termed mosaicism.

According to Pollard and Haisley in Hickson, L.et al. (1995:108), Down's syndrome which is linked with the chromosomal defects has been the most frequent cause of moderate mental retardation. Children with moderate mental retardation usually experience early delays in a number of developmental areas such as sitting, walking, communication, toileting, social adjustment and self help.

2.4 LANGUAGE ACQUISITION IN CHILDREN WITH DOWN SYNDROME

According to Robert J.Doman, JR.(1999), neuro-motor problems involving speech are very common among Down Syndrome children. The origins of these problems are the same as those in the development of auditory tonal processing and sometimes are the reflection of auditory tonal processing or sequential processing problems. Health issues that effect the development of the sinuses, mouth, and tongue are the culprits in the development of the structure required for good articulation. The typical scenario involves chronic problems that can originate with the ears, throat, tonsils, adenoids, lungs or sinuses. Low tone coupled with chronic problems that lead to mouth breathing, poor chewing, poor tongue and palates, enlarged tonsils and poor lung capacity all create structural problems that impair speech.

These problems can be lumped together as oral motor problems. Some speech problems are reflections of auditory tonal issues rather than neuro-motor problems. If the child is unable to hear a tone properly he will be unable to reproduce that tone properly. Auditory sequential processing also has a significant effect on speech. Children will generally try to use more pieces that they can hold onto and will produce tonal approximations of the language. If a child is able to reproduce individual sounds and articulate one or two syllable words well, but the articulation breaks down if the child tries to say a longer phrase or sentence, the problem is the auditory sequential processing.

2.5   COMMUNICATION

Hammil and Bartel (1990:3) pupport that in 'the art of communication the speaker and the listener are said to be in their own cognitive world of ideas, inventions and feelings.' In a communication, only a portion of this world can be communicated. Thus the 'shared knowledge' of the speaker and listener can overlap based on the kind of experience the speaker and listener share.

2.5.1   THE NATURE OF COMMUNICATION

According to Owens, R, in Shames G.H et al. (1994:40) communication is the process of giving and taking information and ideas. Therefore, it is an active process which involves a speaker, a medium and a listener. Each communication partner must be aware of needs of others so that messages are conveyed and received correctly. Owens adds that besides speech and language, other aspects of communication such as paralinguistic, nonlinguistic and metalinguistic communication may improve the linguistic

code.(Owens,R,in Shames G.H.et al. (1994:40). Owens further states that 'paralinguistic mechanisms can change the form and meaning of a sentence by acting across individual sounds or words of a sentence.(Owens, R.in Shames G.H. et al. (1994:40). These mechanisms show attitude besides intonation, stress , speed of delivery and pause.

Owens explains that nonlinguistic clues or non-verbal clues involve gestures, facial expression, and physical distance. Communication can be established by each of these non-linguistic clues. (Owen, R. in Shames G.H et al.(1994). He further explains this with an example.

He says that while gestures enhance speech and language and initiate a communication, facial expression can reveal the speaker's attitude toward a situation and finally physical distance shows the degree of involvement of two speakers in an interaction.

According to Owens, metalinguistic cues refer to communication based on our intuitions about the acceptability of utterances. (Owens, R. in Shames G.H. et al, (1994:41). Thus he states that "metalinguistic skills enable us to talk about language, analyse it, think about it, separate it from its context, and judge it."(Owens, R, in Shames G.H. et al. (1994 : 41).

2.6   DEVELOPMENT OF COMMUNICATION

According to Condon and Sanders in Shames, G.H et al.(1994:42), communication is said to be present from birth and the child communicating with the mother immediately. A child is able to move its body in tune with the human voice within a few minutes of birth. Infact the newborn will look for the human voice and respond to it when it finds the sound source. Bell, K. in Shames G.H. et al.(1994:43) states that when a mother responds to her infant's early reflexive behaviours, the infant learns to communicate to its intentions. Through continuous interactions, the infant learns to refine these communication skills. Bell further states that this process is not one-sided, nor is the child a passive participant".(Bell,K, in Shames,GH. et al. (1994:43).

Shames, G.H. et al(1994:44) states that a child demonstrates communicative skills even at the single word level. The child exhibits presupposition which is the assumption that the listener knows or does not know certain information that will affect his communication. Then during the school age period, a child can progress in the use of paralinguistic, non linguistic and metalinguistic aspects of communication and also be able to judge the grammaticalness of language structure.

2.7   LANGUAGE

Shames, G.H. et al. (1994), states that language is a tool, defined as a socially shared code or conventional system for representing concepts through the use of arbitrary symbols and rule-governed combinations of those symbols. Each language has its own symbols and rules for symbol combination.

Language exists because language users have agreed on the symbols and the rules to be used. This agreement is demonstrated through language usage. He says since users can agree to follow the rules of a language, they can also agree to change the rules. The conventional or socially shared code allows language users to exchange information. Each user encodes and decodes according to his concept of a given object, event, or relationship. Thus, coding is a factor of the speaker's and listener's shared meanings, the linguistic skills of each, and the context.

2.7.1   COMPONENTS OF LANGUAGE

Bloom and Lahey in Shames G.H. et.al. (1994:46) have divided language injto three parts namely form, content, and use. Form refers to syntax, morphology and phonology. It basically refers to those areas that connect sounds or symbols with meaning. Content comprises meaning or semantics and the Use component includes pragmatics. These five areas namely syntax, morphology, phonology, semantics and pragmatics form the basic rule system of a language which are interrelated.

2.7.2   SYNTAX

Shames, G.H. et al (1994:47) says that the rules of syntax govern the structure of a sentence. Syntax rules specify the order of word, how a sentence is organized, and the relationship between words, the class of words, and other sentence constituents. Through the study of syntax, we learn to accept word combinations and grammar rules. A speaker is able to understand and produce language when he has the knowledge of language rules. Therefore, language form and cognitive processing are linked.

2.7.3   MORPHOLOGY

Linguists in Shames, G.H. et al (1994:48) consider morphology as part of syntax and therefore it is concerned with the internal organization of words. A language user is able to modify word meanings and produce semantic differences through the knowledge of morphology. A morpheme is defined as the ' smallest unit of function meaning in a language.' There are two types of morphemes. Free morphemes are whole words which have meanings.

For example cat is a free morpheme. Bound morphemes refer to parts of words which serve grammatical   functions, such as the plural – 's'. Bound morphemes are known as such because they are part of another word. Children need to learn the rules that underlie the use of morphemes so that they can produce accurate words.

2.7.4   PHONOLOGY

Shames, G.H.et al.(1994:49) state that every language has specific phonemes and sound combinations that are typical of that language. They state that 'phonemes are the smallest meaningful units of speech sound', which are combined in specific ways to form 'words'. Phonological rules and distributional rules govern a language.

While phonological rules refer to the distribution and sequencing of phonemes, distributional rules look into which particular sound can be used in the various positions in words. For example, in English, the /h/ sound may or may not be voiced at the beginning of the word.

2.7.5   SEMANTICS

Shames, G.H. et al. (1994:49) associate semantics with the relationship of language form to objects, situations and word.

According to Brown, R. and Olson in Shames G.H. et al. (1994:50) a word may have several meanings, so the speaker needs to understand the context in which the speech is produced while a sentence gives a broader meaning than individual words because it refers to the relationships between the words and the symbols used.

2.7.6   PRAGMATICS

Rice in Shames G.H. et al.(1994: 50) states that a child can communicate effectively when he has the knowledge of forms and content. Reves and Wollner in Shames G.H.et al(1994:50) state that pragmatic rules control "sequential organization and coherence of conversations". "repair of errors, roles and speech acts". The "organization and coherence of conversations" include turn-taking, initiating, maintaining and ending a conversation besides initiating, maintaining and contributing to a topic. "Repair" refers to giving and taking feedback while "role skills" relate to initiating and maintaining a role, besides switching linguistic codes according to the role. Finally "speech acts" refer to the encoding of intentions in a communication context.

2.8   CHILDREN WITH MENTAL RETARDATION

According to Shames, G.H. et al. (1994:184), children described as mentally retarded are diagnosed according to two characteristics:

a. sub average overall intellectual functioning and

b. personal independence and social responsibility that are below the level expected for the child's age and cultural group.(Shames, G.H.et al(1994:184).

They state that it is not clearly known why mentally retarded children's linguistic abilities are low. The common language problem among these children is the inability to learn to communicate in a manner that is common with normal children. Shames, G.H.et al.(1994:185) state that studies on children who had low functioning level for formal instruction showed that these children were given limited language exposure. It has been noted that parents of mentally retarded children do not interact with their children in the same way as parents of normal children do. Thus parental behaviour may be the cause for the lack of responsiveness of the child. These children are slow to acquire most of the linguistic features. Shames, G.H.et al. further state that the degree of language delay in mentally retarded children depends on the severity of their overall disability. For example, some children may not begin to use words until age five, while others may need intervention to communicate by pointing or gesture.

Although it is not known whether children with mental retardation learn the same way as normal children it is known that the older a mentally retarded child acquires language, it is likely that his ability will not be the same as a normal child. (Shames, G.H.et al.

(1994:185). This chronological age is an important factor in the study of the language of mentally retarded children. These children are also noted to acquire a language feature through rote-learning and thus they may not be able to apply this feature in other situations.

2.9 LANGUAGE CHARACTERISTICS OF CHILDREN WITH DOWN SYNDROME

According to Gibbs & Carswell(1991:307) research has shown that a number of children with Down's Syndrome have exhibited language delays, mainly in expressive abilities. This delay is found to be more severe than it is anticipated from their cognitive level. Mahoney et al. in Gibbs & Carswell (1991:307) found that children with Down's Syndrome had a low score on the vocal imitation scale of the Uzgiris and Hunt (1975) Scales of Infant Psychological Development.(U.H) and also scored lower on both the receptive and expressive scales of the Receptive-Expressive Emergent Language Scale.(REEL) than a normal group matched on mental age (MA). It was seen that the children with Down Syndrome scored higher means-ends scale of the U-H assessment than the normal group, and this suggests that the children with Down Syndrome had strong non-verbal cognitive skills and weak verbal abilities. Beeghly et al in Gibbs and Carswell (1991:307) matched children with Down Syndrome with two normal groups, that is one according to MA and the other according to Mean Length of Utterance (MLU).Their research showed that children with Down Syndrome had lower MLUS than MA matched normal children.

Besides it was also noticed that the pragmatic skills (i.e. turn-taking ability, speech acts) of children with Down Syndrome were more advanced than those of MLU – matched

children but the same as MA-matched normal children. Cardose-Martins et.al.in Gibbs and Carswell (1991:308) reported that the initial stage of receptive and expressive verbal ability occurred at the same developmental levels in Down Syndrome and normal children but it was noted that further development of both receptive and expressive ability was delayed in children with Down's Syndrome when compared to normal children who were at the same level of sensory motor development. These findings reveal that children with Down Syndrome are delayed compared to their cognitive and communicative abilities.

Miller in Gibbs and Carswell (1991:308) has confirmed those findings by conducting a test on the language and cognitive profiles of a group of children with Down Syndrome. His research showed that by three years of age, 75% of these children showed expressive language delays compared to their cognitive abilities. Therefore children with Down Syndrome children are at high risk for developing expressive language delays.

Miller in Gibbs and Carswell (1991:308) gives reasons for possible language delays in children with Down Syndrome.

First he suggests that children with Down Syndrome tend to get ear infections and therefore they experience intermittent hearing loss. Second, oral motor problems may occur as a result of "hypotonicity and structural differences" (i.e. diminished oral cavity and enlarged tongue).Finally specific cognitive differences such as auditory processing problems and the limited responsiveness between parent-child interaction have been hypothesized to underlie the language disabilities of children with Down Syndrome.

Based on research it has been noted that children with Down Syndrome have specific verbal language disability but have more functional abilities in non verbal areas. Therefore the use of speech and manual signs may help to overcome early language delay. Dockrell and Messer (1991:64) too suggest that communication using gestures and single word utterances are appropriate for their level of ability.

According to Dockrell and Messer(1999:64) children with Down Syndrome, produce their own sentence structures, where a set of words is used as a phrase such as "Here you are". These children may then have two word speech where they add occasionally new words to each word.

The multi-words speech of the children is seldom produced by four years of age and not all children reach this level of competence. The multi-word speech does not have all the appropriate grammatical structures and it has been noted in research that these children have difficulties in using personal pronouns such as "he, she and they". The children may not be able to use question tags and often their speech is telegraphic. A study by Chapman, R. and her colleagues in Dockrell and Messer (1999:64) on a group of teenagers has shown a continuous development of the adolescent age a point where researchers thought that language development had stopped.

Dockrell and Messer (1999:65) say that it has become obvious that the speech of children with Down Syndrome is less complex. According to Chapman, in Dockrell and Messer (1999:65), when speech comprehension was measured it was found that the ability to match a picture to a word was high and this shows that there is a gap between comprehension and production.

Dockrell and Messer (1999:65) say that during early non-verbal social interaction, children with Down's Syndrome show lack of interest in objects, thus displaying difficulties trying to pay attention to the speaker and to the topic of communication.

The children rarely request objects by pointing or reaching. The writers further say that the social interaction tends to be "more directive and controlling" on the parent's part, thus not likely to promote the use of productive speech. This type of interaction may reduce the opportunities for children to produce speech, which is a common difficulty seen in children with Down's syndrome. However, this type of interaction is useful and appropriate for children who lack attention and who do not initiate interactions.

2.10 PRAGMATIC SKILLS OF YOUNG CHILDREN WITH DOWN SYNDROME

Early studies on children with Down Syndrome were carried out in the 1950s which focused on the children's speech as well as their communicative abilities. Kramer (Zisk & Bialer, 1970) pointed out that the children with Down Syndrome were capable of responding to efforts aimed at improving their communicative abilities.

Research on the pragmatics of children with Down Syndrome started in the 1970s. Language development and the characteristics of communicative behaviour of these children were the focus of this research.

Some researchers have compared retarded and non-retarded children according to chronological age and according to their language level. Research have been done to study some aspects of pragmatics of children with Down Syndrome. Among them are Leifer and Lewis (1984) who compared the acquisition of conversational skills of young children with Down Syndrome with non-retarded young children.

Their subjects fall into three groups:

(1) 4 non-retarded children (3 boys and 1 girl) ages 18 to 24 months,

(2) 4 retarded children (2 boys and 2 girls) who were matched with the non-retarded children for chronological age (CA).

(3) 6 retarded children (3 boys and 3 girls) who were matched with the non-retarded group for expressive language ability.

This study focused on the responses of the children in mother –child discourse. The researchers categorized the various responses of the children into appropriate, inappropriate and indeterminate responses.

Appropriate response in this sense referred to a suitable verbal/non/verbal responsive behaviour that match the pragmatic intent of the mother's question, while the opposite was the reference for inappropriate response. Indeterminate response referred to those that were unclear or incomprehensible.

Retarded children showed delayed response performance in comparison with CA-matched non-retarded peer. However, when matched for language level, retarded children demonstrated greater response abilities than the non-retarded children.

2.11   COMMUNICATION DIFFICULTIES OF CHILDREN WITH DOWN SYNDROME.

According to Dockrell and Messer (1999:65) children with Down Syndrome face difficulties in three main areas namely difficulties in hearing, difficulties in using and remembering auditory information and difficulties in producing sounds.

2.11.1 DIFFICULTIES IN HEARING

According to Dockrell and Messer (1999:66) about three quarters of children with Down Syndrome have problems with hearing. These are due to physical problems, besides being prone to otitis media.

The hearing difficulties often result in problems in detecting soft spoken speech and higher frequency sounds.

Dockrell and Messer (1999:66) state that there have been contradicting research findings of whether the degree of hearing loss is related to language abilities in children with Down Syndrome. Research carried out by Marcell, M. and his colleagues cited in Dockrell and Messer (1999:66) found that the degree of hearing loss is connected to some aspects of speech production abilities. However, Chapman, R, in Dockrell and Messer (1999:66) did not find a close relation between hearing loss and speech in older children. However, Chapman R, in Dockrell and Messer (1999:66) did not find a close relation between hearing loss and speech in older children. However, according to Dockrell and

Messer (1999:66) the limited evidence shows that effects of hearing loss on speech is only subtle and therefore it is important to note that hearing loss together with other disabilities may result in language delays.

2.11.2 DIFFICULTIES IN USING AND REMEMBERING AUDITORY INFORMATION

Dockrell and Messer(1999:66) have found that children with Down Syndrome have difficulties using information received through the medium of sound and speech. Teenagers with Down Syndrome can repeat only three or four digits that are spoken to them when compared with normal teenagers. They are able to use visual spatial skills quite effectively.

According to Dockrell and Messer(199:66) researchers have suggested that children with Down Syndrome have a difficulty with short term auditory memory. However, Chapman R, and her colleagues in Dockrell and Messer(1999:67) state that the mental and chronological ages determine the language abilities of children and adolescents with Down Syndrome.

Buckley and Bird's finding cited in Dockrell and Messer (1999:67) shows that children with Down Syndrome can be taught to read although their language ability is low.

Generally these findings suggest that the high visual processing ability in children with Down Syndrome enable them to pick up reading and language.

2.11.3 DIFFICULTIES IN PRODUCING SOUNDS

Dockrell and Messer(1999:67) state that children with Down Syndrome tend to mispronounce words and thus, their speech is difficult to understand. The researchers too state that children with Down Syndrome have a larger tongue compared to their mouth cavity whilst their muscles are hypotonic, These features may cause mechanical difficulties in sound production.

Some researchers suggest that language delays in children with Down's Syndrome are not only caused by mechanical difficulties in the production of sounds. According to Dockrell and Messer (1999:67) the development of babbling shows that babies with Down Syndrome produce the range of sounds as children of the same chronological ages. If there exist mechanical problems then certain sounds are expected to be absent.

Therefore, the evidence shows that mechanical problems are not the only cause of speech or language problems in children with Down Syndrome.

2.12   MODELS OF LANGUAGE DISABILITY

Crystal D. (1980:16) advocates that in the investigation and treatment of linguistic disability, two main categories are involved. The first is the category which is derived from the principles and practice of medical science also known as the 'medical model'. The other category is derived from the behavioral sciences and is known as the behavioral model.

For the purpose of this study, the behavioral model is emphasized as the medical model deals with medical science. The behavioral model describes the characteristics of the patient's abnormal speech. The aim would be to identify if there was any stability or pattern in the speed or whether a child had preference to use a particular area of language rather than another.

2.13   THE BEHAVIORAL MODEL

In this model, we are looking at those sciences which study the observable behavior of men and animals namely psychology, social anthropology and linguistics.

According to Crystal D. (1980:28). the study of language phonology involves five independent stages:

a)   the description of the linguistic behavior of patients and of the   linguistic behavior of the clinicians and others who interact with them.

b)   the analysis of these descriptions with a view of demonstrating the systematic nature of the disabilities involved.

c)   the classification of patient behavior, as part of the process of differential diagnosis.

d)   the assessment of this behavior, that is plotting the kind and degree of abnormality, with reference to normal behavior.

e)   the formulation of hypotheses for the treatment of this behavior and evaluating the outcome.   (Crystal,D. 1980:28)

Before we can treat a patient's linguistic disability, we must have analysed in advance, which particular area of his problem will be the best point to start. To do this, we have to carry out a systematic assessment of his disability.

We have to point out how the abnormal features of his language differentiate him from a normal language user. Through this we will be able to observe a pattern or system in his abnormal behavior. Therefore we need to understand and describe the linguistic behavior of the patient before we begin the intervention.

2.14   INTERVENTION PROGRAMME

According to Dockrell and Messer (1999:134) "an intervention is any planned action designed to modify an unwanted outcome." The aim of intervention is to include the acquisition of new skills and knowledge and also to guide the children to practise and to maintain skills and knowledge learnt.

 The intervention process involves 3 stages:

Devise the intervention   → Implement the intervention → Monitor the impact of the intervention →If unsuccessful, return and consider each of the components.

(The Intervention Equation)

Source: Children's Language and Communication Difficulties,   Dockrell & Messer (1999:135)

The first stage involves devising the intervention. The intervention is prepared to meet the specific needs of a child. To do this, a hypothesis is made about the nature of and the cause of a child's problems.

The second stage is implementing the programme. The intervention can be carried out by parents , caretakers, and teachers with whom a child interacts on a daily basis.

The final stage is evaluation of the effectiveness of the intervention in a child.

However, if the initial intervention techniques are not successful, the intervention should be repeated to reassess a child's difficulties. (Dockrell & Messer. (1999:135).

Lovaas, et al. in Sundberg, M.L and Partington,J.W. (1998:15) have said that early intervention is vital for working with children who have severe language delays. Treatment programmes are usually effective when they are started early. They have stated that "each child is an unique individual and thus it is vital to individually determine a child's educational needs and design a plan according to those needs." (Lovaas, et al. in Sundberg, M.L and Partington,J.W.1998:15).

2.15   BEHAVIORAL APPROACH TO LANGUAGE

Skinner, B.F. in Sundberg M.L. and Partington J.W. (1998:297) states that language is behavior which is mainly caused by environmental variable such as reinforcement, motivation and extinction and punishment.

Skinner, B.F. in Sundberg M.L. and Partington J.W.(1998:297) say that the behavioral approach analyses language by its "formal and functional properties" .The formal properties of language consist of the physical description of specific response topographies, or classes of responses (e.g. nouns, verbs, adjectives, pronouns). It also includes the syntactical order of phrases and adherence to grammatical conventions.

The formal properties of verbal behavior also include articulation, intonation, pitch, emphasis, and so on. The functional properties of verbal behavior consist of the circumstances under which responses occur, more specifically, an analysis of the discriminative stimuli, establishing operations (motivation), and consequences that control a response, or class of response (also known as pragmatics).

In Skinner's (1957) analysis of verbal behavior he distinguished between several different types of functional control. This analysis has resulted in a classification system that allows for the identification of these functionally different types of language.

Based on this system, Skinner (1957) identified and named these verbal relations as follows:

Receptive: Following instructions or complying with the mands of others. A tendency to touch a picture of a dog when asked to touch the dog.

Echoic: Repeating what is heard. A tendency to say "dog" after someone else says "dog".

Imitation: Copying someone's motor movements. A tendency to clap after someone else claps.

Tact: Naming or identifying objects, actions, events, etc. A tendency to say "dog" because you see a dog.

Mand: Asking for reinforces that you want. A tendency to ask for a dog because you want one.

RFFC: Identifying specific items when given some description (its function, features, or class) of the item. A tendency to touch a dog when someone says "Which one barks?"

Intraverbal: Answering questions or conversations where your words are controlled by other words. A tendency to say "dog" when someone else says "Lassie".

Textual: Reading written words. A tendency to say "dog" because you see the written word "dog".

Writing: Writing and Spelling words when spoken to you. A tendency to write "dog" because you hear it spoken.

Source: (Sundberg, M. L. and Partington, J.W. 1998:36).

According to Ashman, Elkins (1998:141) The Behavioral Approach is structured based on the environment and the content to be learned so that the correct learning or behavior will be elicited from the students, thus showing success.