THE EDUCATIONAL BACKGROUND OF THE GIFTED INDIAN PRE-SCHOOL CHILD

by

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"I declare that The Educational Background of the Gifted Indian Pre-School Child is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references".

V A J Jaggan

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Dedicated with the fondest of love to:

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the bastions in my life.

Never swerve from your duties towards gods and departed souls.

May the mother be, to thee, a God.

May the father be, to thee, a God.

May the preceptor be, to thee, a God.

May the guest be, to thee, a God.

Let only actions that are free from blemishes be done and not others.

You must follow only those virtuous actions which are irreproachable - and not others.

(Taithiriya Upanishad, Chapter 1, Anuvaka 11)

THE EDUCATIONAL BACKGROUND OF THE GIFTED INDIAN PRE-SCHOOL CHILD

SUMMARY

The study focussed on determining whether there were any distinguishing characteristics that comprised the background of the gifted Indian pre-school child.

The paucity of literature on the Indian pre-school child forced the researcher to rely on international studies.

The theoretical composition of the study reviewed personality and normative development, as well as cognitive development of the gifted pre-school child. Family background and stimulatory activities that parents engaged children in, were also explored.

The empirical investigation combined the use of quantitative and qualitative techniques.

Initially, parents, teachers and peers were responsible for selecting the research sample. The sample of eighty-three children was subjected to the administration of the JSAIS. Of this twenty-five were selected in order for the questionnaire to be administered to their parents.

Results of the questionnaire indicated that parents undertook to stimulate their children by engaging them in activities that they were of the opinion would promote their intellectual development.

The results of the questionnaire were corroborated by interviews that were conducted with six of the parents. Relevant excerpts from five of the interviews are presented as well as a full interview with one of the parents.

The results reveal that parents continuously strive to stimulate their children so that they can ensure that the potential that they believe their children possess can be actualised.

KEY CONCEPTS

Educational

Background

Gifted

Indian

Pre-school

Child

Psycho-social

Normative

Cognitive

Intellectual

Stimulation

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CHAPTER ONE

INTRODUCTORY ORIENTATION, ANALYSIS OF THE PROBLEM AND THE DEFINITION OF CONCEPTS

1. INTRODUCTION

The researcher was intrigued by intellectually gifted children and wondered whether it was the child's background and stimulation from birth that contributed to the child's intellectual development or if it was the child's genetic make-up that was responsible for his initial success at school. Having observed and interacted with the so called "gifted pre-school child", the researcher was led to believe that a myriad of other factors could also be responsible for, or could contribute to, children being considered intellectually gifted.

It is the researcher's assertion that the child is stimulated to different degrees, by parents, the child's immediate family and those who take care of the child whilst the parents are at work. The nature and influence of day care centres and the impact of pre-schools and nursery schools, although debatable, cannot be marginalised.

This intrigue with the pre-primary school child's intellectual development and behaviour prompted the researcher to have discussions with, and to conduct non-structured interviews with parents of children considered to be gifted. These discussions and interviews

led the researcher to believe that intellectual stimulation impacts on the child's intellectual development and also seems responsible for the manner in which the child applies himself. The child's success at school and in other activities which draw on cognitive, social and moral characteristics, could also be partly attributed to his background parallel to the nature of stimulation that the child has continuously received over the years.

This has lead the researcher to suspect that given a certain cognitive potential, the child will benefit tremendously from intellectual stimulation.

Parents throughout the world hope to stimulate their children sufficiently so that they can achieve success in their diverse intellectual endeavours. These opinions are well documented in the literature surveyed, in chapter 4, where the primary focus is on the impact of background and stimulation in the development of the child's potential.

The importance of and need for, greater emphasis on pre-primary education and early childhood care and development have been stressed by the De Lange Commission (1981), the National Educational Policy Investigation (1992), and the ANC Education Department (1994).

It is stressed in these reports that pre-primary education in its different modalities, will not only enhance the child's self-esteem, but will ultimately impact on the child's adequate realisation of his innate abilities. This would, simultaneously, provide a sound educational basis for the nurturing of potential to meet the burgeoning economic needs of the community.

Because pre-primary education enhances academic performance and economic potential, this stresses the role parents, day care centres and pre-schools could play in the realisation of this goal (Circirelli 1978; Walberg & Majoribanks 1976; Gesell et al. 1995).

1.1 AWARENESS OF THE PROBLEM

The voluminous literature surveyed, focused exclusively on British and American Research findings, and indicated a dearth when the South African context was considered.

This paucity in the literature was accentuated when the intellectual stimulation and background of the Indian child in the South African context was surveyed: South African Indian children were not adequately considered.

As the researcher is a South African of Indian origin, he was perturbed by the virtual non-existence of literature on "giftedness" in South African Indians and other minority groups in the country. McIntosch (1995) acknowledges that there is a pressing need to serve the needs of ethnic minorities. This requires a system that can identify students timeously and arrange for an appropriate intervention programme to incorporate their special needs.

Compounding the complexity is the fact that Gifted Children are a minority in themselves, representing only three percent (3%) of the population. Thus identifying and serving ethnic minorities within this minority poses an added challenge for South African schools.

1.2 EXPLORATION OF THE PROBLEM

Feuerstein (1980) has demonstrated that appropriate intervention with an enrichment programme makes it possible to modify a child's cognitive abilities. His approach has aptly been called MLE (*Mediated Learning Experience*), whereby the child's own experience is mediated into the mainstream culture.

Piaget (1952) in his legendary *Origins of Intelligence* has looked at the manner in which children think and how thinking as an activity could be promoted.

The British and American literature has indicated that there are certain axioms that transcend cultural boundaries such as religion, song, music, technology, drama, and reading ; the researcher is aware that these postulates have, to varying degrees, been used in the development of the cognitive and intellectual abilities of children. Being fully aware of the existence of these beliefs, the researcher's dilemma was to examine the nature of these postulates and how best they could be used to enhance the child's development.

At an informal level the researcher is intensely aware that Indian parents have very high aspirations for their children and that they are intensely involved with their children in motivating them to realise their potential.

Singh (1989: 22), in reviewing Indian Education as implemented in the Apartheid era, stressed that

> "the importance of education as a means for upliftment
> was realised by our community from the earliest of time.

> In this regard our parents need to be complimented on their efforts they have generated in the provision of educational resources for our pupils at a time when State responsibility was minimal".

As a consequence, it would seem that Indian parents are both directly and indirectly, as well as formally and informally, involved in the education of their children. At a formal level, during Apartheid, parents built schools, bought books and even paid teachers' salaries. The more affluent Indian families sent their children overseas to acquire professional qualifications. At an informal, level they encouraged their children to study and helped where they could, always emphasising the importance of "a good education". They also organised religious and vernacular classes. Today, in Post-Apartheid South Africa, this involvement still persists. Very often it is inextricably related to stimulating their children with the sole objective of "hoping and wanting their children to be bright", thus ensuring that a "bright" future will unfold.

1.2.1 Parental Behaviour

Walberg (1993:28), in a 19-year longitudinal study involving almost six thousand children, concluded that "academic ability and achievement are more closely linked to the measures of the socio-psychological environment and intellectual stimulation in the home than they are to socio-economic status".

This correlates with the McCall, Applebaum and Hogarty (1973) study which is referred to by Bradley & Caldwell (1976:93), who conclude that "parental behaviour does relate to IQ level during childhood", emphasising the fact that increases on infant mental test scores could be related to parents' acceleration and encouragement of intellectual development.

Bradley & Caldwell (1976:96) have concluded that "mothers whose infants improved in mental test performance as a consequence of appropriate intervention not only encouraged and challenged the child to develop new skills but also provided the child with the kinds of play material needed for development".

This confirms the results of Van Doorninck et al. (1981:1080), who correlated the scores on the Home Observation for Measurement of the Environment (HOME) with elementary school achievement, and found that a correlation of .86 could be computed.

1.2.2 The Relationship Between Infant Stimulation and Cognitive Development

Quisenberry (1982:247), in reviewing literature (Bloom 1964; Hunt 1961; Bruner 1968), concluded that early experiences are significant to the cognitive development of children since intellectual capabilities are significantly developed in the first four years of life.

The notion of infant stimulation and its impact has also been demonstrated on pre-term infants (Beckwith 1984:27) with amazing positive results, indicating that early home environment does alter developmental competence in these infants. This leads one to speculate about how much more the positive effects would be, if similar kinds of stimulation were to be offered to children born after a normal gestation period.

Burger (1992) presents the view that early intervention facilitates cognitive development, and of significance is the unique position that the mother, as primary care giver, plays in the designing of the child's environment such that it allows for optimal actualisation of the child's potential. Beck (1982:2), in emphasising the role of the parent says that

> "you as a parent, are of necessity the first and most important teacher your child ever has. You have the unique opportunity to boost your youngster's intelligence when it is most subject to change, to teach him individually, at his own rate and when and by what means he is most likely to learn to shape your relationship with him in ways that can actually help him become brighter".

In taking new research related to brain functioning into consideration, Clark (1988) has added a biological dimension to giftedness. Clark (1988:6) has concluded that certain brain functions are superior due to specific neurological characteristics. She does, however suggest that although the brain functions of sensing, thinking, feeling and intuition are to a great extent genetically determined, they are ultimately influenced by the environment. Kokot (1992:39) accurately summarises Clark's view on giftedness by concluding that giftedness is seen as an interactive process between genetic endowment and environment.

1.2.3 Care Givers

Besides parents providing high quality care and ensuring that a stimulating environment prevails in the child's life, the literature surveyed (McCartney et al. 1982; Knight 1982; Rubenstein et al. 1979; Wortham 1995) indicates that surrogate parents, in the form of secondary care givers and the Pre-school are also integral to intellectual stimulation.

1.2.4 Crèches and Pre-schools

It is well documented that pre-school children who have spent time in "childcare centres, crèches and pre-schools are, on the average, socially and intellectually advanced over their peers who have been at home" (Clarke-Stewart 1991:118).

The institutional environments may differ qualitatively from the home but the fundamental difference lies in the kinds of experiences that the children are likely to be exposed to and the significant effect that these have on the child's development.(Burchinal et al. 1978; Rubenstein et al. 1979; Segal & Storey 1985; Curtis 1994).

Ellermeyer (1988:227) concludes that for the disadvantaged child, day care is both cognitively enriching and advantageous. However, findings concerning the advantaged child are not so conclusive, with some researchers reporting beneficial effects, and others reporting negative effects on cognitive functions.

It could be argued that the best intellectual stimulation takes place between an intelligent, informed and involved parent and his pre-schooler (Lobel & Bempechat 1992; Sonnenschein et al. 1992; Smith 1995). However, a crèche or pre-school is a compromise if inadequate home stimulation does not take place.

1.3 STATEMENT OF THE PROBLEM

It is evident that there are many facets to the background of the child, who is considered gifted, and the manner in which these many facets are nurtured, promotes development of the child. Experiences at home, whether initiated by the children or by others; experiences at pre-school or with surrogate parents; as well as the children's relationship with their parents, and the background of the parents impact upon children.

From the above, it can be ascertained that a multitude of factors exist and isolating any of them and the impact that they have on pre-school children and their development, will be difficult.

As a consequence, it is the researcher's intention to establish the nature of the relationship that exists between pre-school children who are considered to be gifted and their home background and intellectual stimulation prior to going to school.

1.4 FORMULATION OF THE PROBLEM

The main problem is:

Does the parents' educational input have an influence on their pre-school child's intellectual development?

This could be broken up into the following sub-problems:

- how does family background impact upon the pre-school child?
- what is the impact of reading and television on the pre-school child's development?
- do daycare and pre-schooling impact on the pre-schooler ?
- how do recreation and exposure to technology influence the pre-school child?
- in what ways do the different facets of child development affect the pre-school child's intellectual emergence.

1.5 THE AIM OF THE STUDY

The main aim of the study is:

To determine whether the parents' educational input have an influence on their pre-school childs' intellectual development.

The other related aims are:

- to determine whether the parents' background impacts upon stimulation of the child.
- to assess whether activities like reading, watching television, attending daycare and pre-school, and exposure to different kinds of recreational activities and technology affect the pre-school child.
- to recognize how the pre-school child's motor, social, moral, and cognitive development manifests.

1.6 DEFINITION OF CONCEPTS

The topic for this research study is:

THE EDUCATIONAL BACKGROUND OF THE INTELLECTUALLY GIFTED INDIAN PRE-PRIMARY SCHOOL CHILD.

For the purposes of understanding the topic with greater clarity the following definitions will be used:

1.6.1 Pre-Primary School Child

The literature describes the pre-school period as that period between the ages of two years and six years. Mwamwenda (47:1995) specifically refers to this period as "early childhood". In terms of Erikson's psychosocial development, the pre-school period would embrace his first three stages, viz Trust versus Mistrust, Autonomy versus Shame and Doubt, and Initiative versus Guilt. (Erikson, 1963). With respect

to Piaget's theory of cognitive development the pre-school period would encapsulate the first two stages of cognitive development - the Sensorimotor stage and the Pre-operational stage (Evans, 1973).

1.6.2 Background

This would be considered in terms of a persons cultural knowledge, education and experience. The framework for this understanding will rest upon the family and their idiosyncrasies.

1.6.3 The Gifted Child

Davis & Rimm (1985:12) say that almost everyone is talented. Their analysis of giftedness, (incorporating the ideas of Renzulli, Reis & Smith), is aptly summarised by Hallahan & Kauffman (1994:453) who offer a summary of giftedness as follows:

1. High creativity (the ability to formulate new ideas and apply them to the solution of problems).

2. Above average intelligence (but not necessarily high intellectual ability).

3. High task commitment (a high level of motivation and the ability to see a project through to its conclusion).

Kokot (1992), in referring to the studies of De Witt & Van Zyl (1990) and Freeman (1985) shows that the above criteria have been used to identify older gifted children. When applied to gifted pre-schoolers, these are inadequate to Kokot (1992), who rather suggests the following areas as being relevant:

- cognitive domain
- physical domain

- affective domain
- normative domain
- specific giftedness

1.6.4 Indian

These are people whose descendants and ancestry come from India and who have been defined by the Population Register Act of 1950 as being Indian. (Although the Interim Constitution does not define people according to race, there is a tendency for people still to refer to themselves in terms of their origins.)

1.7 METHOD OF RESEARCH

The method of research to be followed is a combination of qualitative and quantitative research which will be detailed step by step in chapter five of the report. However, it must be mentioned that prior to a specific method being adopted, informal questions were asked to parents and teachers. and then a literature search was embarked upon.

1.7.1 Research Programme

Chapter One focusses on the exposition of the problem. The chapter is directed at the Awareness of the Problem, Exploration of the Statement of the Problem, Exploration of the Problem and Aims of the research project. It also explores the concepts relevant to the field of study and the planned research programme to be followed.

Chapter Two concentrates on the psycho-social and normative development of the pre-schooler.

Chapter Three describes the cognitive development of the pre-school child.

Chapter Four describes the background and stimulation of the pre-school child.

Chapter Five details the research design as it has been implemented in the study.

Chapter Six reports on the findings of the empirical investigation.

Chapter Seven offers conclusions, recommendations and implications that could be made on the basis of this study.

CHAPTER TWO

THE PSYCHO-SOCIAL AND NORMATIVE DEVELOPMENT OF THE PRE-SCHOOL CHILD

2. INTRODUCTION

This chapter will focus on the personality and normative development of the pre-schooler. Although there are many different perspectives on children's personality development, there are recurrent references to stages of development as described by Erikson, in Craig (1996), McCown (1996), Hamachek (1995), Hayes (1994), Papilia & Olds (1992), Lay-Dopyera (1990), Sprinthall & Sprinthall (1990) and Clarke-Stewart et al. (1985).

Erikson (1977) in his seminal writing of 1950 - *Childhood and Society* - refers to eight stages of life, which are dominated by the successful resolution of a developmental crisis around a particular psychosocial theme. For an individual to progress from one stage to the next, each of the crises around that stage should be resolved with a "satisfactory balancing of opposites" (Papilia & Olds 1992:146). In referring to the later works of Erikson (1982 and 1980), Hamachek (1990:55) asserts that each individual passes through the "succession of eight psychosocial stages", beginning at birth and ending in the retirement years. Five of the stages are experienced during an individual's first twenty years of life and the remaining three stages during adulthood and late adulthood.

2.1 ERIKSON'S THEORY

The "Eight Ages of Man" described by Erikson (1977: 222), also popularly known as the psychosocial stages, are referred to below. For the purposes of this thesis the first four stages will be developed in greater detail and a synopsis will be given of stages five to eight.

	STAGE	TIME SPAN
1.	Basic Trust versus Basic Mistrust	(Birth to 18 months)
2.	Autonomy versus Shame and Doubt	(18 months to 3 years)
3.	Initiative versus Guilt	(3 to 6 years)
4.	Industry versus Inferiority	(6 to 12 years)
5.	Identity versus Role Diffusion	(12 to 18 years)
6.	Intimacy versus Isolation	(18 to 35 years)
7.	Generativity versus Stagnation	(35 years to retirement)
8.	Integrity versus Despair	(Retirement)

Erikson (1977:122) has observed that each stage represents a "psychosocial crisis" that needs to be resolved. A "crisis" is a time of increased vulnerability to a particular psychosocial challenge encapsulated in each stage. Implicit in the resolution of each "crisis" is the emergence of ego qualities. These ego qualities could be either positive or negative. For the development of a healthy personality the ratio between the positive and negative qualities associated with each stage should be more on the positive side and this will help the individual to cope more successfully with later crises (Hamachek 1995:55).

2.1.1 STAGE 1: BASIC TRUST versus BASIC MISTRUST

(Birth to 12 - 18 months)

This is the first stage, when the new born infant interacts with his mother for the first time. The mother's role during infancy is to provide the new born with love, care and attention. It is during this time that the "feeding relationship" (Gage & Berliner 1991:138) is integral to the development of the child's fundamental feelings of trust or mistrust of the environment. It is imperative for the good psychological health of the child that a favourable ratio of trust (intimacy) to mistrust (self-protection) develops.

Maier (1969:38) maintains that adults other than the mother also enter the infant's life with equal degrees of influence, "as the mother's substitute or as someone with some nurturing purpose". He goes on to argue that the quality of maternal care is to a large degree dependent upon the support that the mother receives from

> "other adults in the household - usually the husband - the family into which the child is born, the society's recognition of the family as one of its basic institutions, and the culture's guarantee for the continuation of the societal mores and values" (Maier 1969:38).

Therefore, it would seem appropriate that when trust dominates the infant's life (irrespective of where it emanates from), the child develops what is described by Erikson as "virtue of hope", which is the belief that his needs will be met and his wishes will be fulfilled. In contrast, if mistrust dominates, the infant will behold the world to be unfriendly and unpredictable. It will overwhelm the child with disappointment and will impact negatively on the child's capacity for developing intimate relationships.

The general state of trust

> "implies not only that one has learned to rely on the sameness and continuity of the outer providers, but also that one may trust oneself and the capacity of one's own organs to cope with urges; and that one is able to consider oneself trustworthy enough so that providers will not need to be on guard lest they be nipped" (Erikson 1977:222).

It would seem that both trust and mistrust are significant in affecting the child's subsequent stages of personality development, "in that a child will grow up either trusting or mistrusting others and the world in general" (Mwamwenda 1995:352). In summary, Gage & Berliner (1991:138) say that a favourable ratio of trust to mistrust is a form of psychosocial strength, the foundation of traits such as optimism and hope. Therefore, trust and mistrust impact on the relationship that the parents share with their children and on the stimulatory behaviour that they engage in together.

2.1.2 STAGE 2: AUTONOMY versus SHAME and DOUBT

(12 - 18 Months to 3 years)

This is the second crisis that an individual encounters in his development. It is in this stage that the infant exercises a push towards autonomy, which is characterised by independence and is embedded in the individual's growth towards maturity.

It is also during this time that the "child's continued dependency creates a sense of doubt in his freedom to assert his autonomy and to exist as an independent unit. This doubt becomes compounded by a certain shame for his instinctive revolt against his

previously much enjoyed dependency and by a fear of perhaps exceeding his own or his environmental limits" (Maier 1969:39).

As the child tries to exercise control over his environment, this control could either be a failure or a success. In this process, a child tests his parents and his environment, to determine that which he is capable of controlling and that which he cannot control.

Besides the child's environment, the social setting has a direct bearing on his ultimate realisation of autonomy (or doubts about it):

> "For the child to release his thoughts and feelings through his behaviour is intrinsically neither good or bad for the child; these values depend on the cultural definition ascribed to the natural urges to assert himself, and will determine the kind of child training devices used to regulate himself" (Maier 1969:44).

Implicit in the writings of Erikson is the belief that all child-rearing patterns lead to some sense of doubt and shame. Therefore, particular behaviours to which a positive or negative value is attached will vary from family to family and from culture to culture. In this way, control of the child's behaviour will have a direct bearing upon the child's attitude towards people, things, values, ideals and organizations later in life.

It is also in this stage that the toddlers develop their muscles trying to do everything themselves, be it walking, eating, dressing or generally exploring the world. The most important characteristic in this phase is the child's ability to develop control

over his bladder and bowels. Children's development in this stage is contingent upon the support that they receive from their parents (Louw et al. 1998:53).

When parents applaud the child's effort, the child derives a sense of pride in his autonomy and begins to trust his judgement and becomes more confident about the decisions that he makes. As the child's confidence increases, it is obvious that he begins to trust his own judgement more and so becomes less reliant on the judgement of his parents. It is in this way that he discovers his will and sense of autonomy, realising that his behaviour is his own (Maier 1969:38 ; Black et al. 1992: 147).

On the one hand, however, permissive parents, who allow their children to engage in tasks that are beyond their ability and, on the other hand, overprotective parents who are restrictive about the tasks that they permit their children to engage in, create doubt in children about their own ability. This inhibits the child from developing mastery over the environment. As a consequence the child develops shame and doubt about himself.

Parents who make many demands upon the child either too early, or emphasize threats and punishments in enforcing the demands, make children lose their personal sense of autonomy and make them feel that they are completely dependent upon, and are controlled by adults. This creates in the child a desire to please the adults and to meet with their expectations.

Good & Brophy (1990:99) maintain that it is tragic to note that any failure on the part of the child may result in feelings of shame and the development of doubt about his ability. It is natural that this creates the ideal climate for difficulties which could emerge in the areas of self-concept and impulse control.

Essentially, it would seem that during toddlerhood the key issues for the child "are the development of self-regulation and self-control versus external regulation and control" (Papilia & Olds 1992:146).

All of the above is highlighted in the words of Erikson (1977:228):

> "this stage, therefore becomes decisive for the ratio of love and hate, cooperation and wilfulness, freedom of self-expression and its suppression. From a sense of self-control without loss of self-esteem comes a lasting sense of goodwill and pride; from a sense of loss of self-control and of foreign control comes a lasting propensity for doubt and shame".

2.1.3 STAGE 3: INITIATIVE versus GUILT

(3 years - 6 years)

Having learnt some control over self and environment, the child ventures forth into trying to conquer his world, for it is "during this period that children's continually maturing motor and language skills permit them to be increasingly aggressive and vigorous in the exploration of their social and their physical environment" (Slavin 1991:41).

The child continues the exploration of his world by walking, running, throwing and catching objects. As this provides the child with a sense of mastery, it reinforces a sense of initiative. In contrast, when the child does not succeed in fulfilling his goals, this creates in him a sense of guilt.

When parents deny the child permission to do certain things which are in response to the child's curiosity, this teaches the child the meaning of "NO". Any transgression on the part of the child with respect to this prohibition, creates in the child a sense of guilt. This is compounded by parents and teachers who use different ways of blocking the child's initiative (Louw et al. 1998:52). Parents and teachers who rarely rebuke or chide the child would raise a child without a fully developed conscience.

When the child experiences external rebuke, he rebukes himself inwardly. This would develop into guilt if the rebuke is excessive. On the other hand, this could evolve into the child controlling his own behaviour before acting, which ultimately will result in the development of his conscience.

A balanced resolution of the initiative versus guilt crisis frees

> "the child's initiative and sense of purpose for adult tasks which promise (but cannot guarantee) a fulfilment of one's range of capacities. This is prepared in the firmly established, steadily growing conviction, undaunted by guilt, that "I am what I can imagine I will be" (Erikson 1968:122).

From a Freudian perspective this stage is also characterized by the development of Oedipal complications, which are based on the child-parent relationship. Although the boy tends to reach out to the mother as the most available love object, society challenges him to shift his identification to his father who is symbol of maleness (Erikson 1967:84) A girl, in contrast tends to attach her desire to her father who

inevitably is the most trusted and available man, whilst she continues to identify with her mother who represents her strivings for femaleness (Erikson 1967:84). As boys and girls find a "romantic" attachment in parents of the opposite sex they "tend to mistrust all those who interfere with this new relationship" (Maier 1969:49). Besides being confronted with issues of sexuality and identification, the child's social circle is continuously being widened and he is faced with the challenge of meeting these needs. He is continuously encouraged to conform to the teachings of society, for failure to do so results in the child developing a sense of guilt. Maier (1969:52) maintains that nursery schools, kindergarten, and primary grades are the major social institutions which, along with the home and church, indicate to the child the range of initiatives appropriate for him at that time in his life.

It is known that children who resolve this third crisis well acquire the "virtue of purpose": "the courage to envisage and pursue valued goals, uninhibited by the defeat of infantile fantasies, guilt and by the foiling fear of punishment" (Erikson 1964:122 in Papilia & Olds 1992:212). These children can then develop into adults who are both spontaneous and responsible, whilst those who do not resolve their third crisis well, may become guilt-ridden and repressed, and there is a possibility of them becoming adults who are self-righteous and intolerant.

2.1.4 STAGE 4: INDUSTRY versus INFERIORITY

(7 years - 12 years)

Erikson asserts that the transition from stage three to stage four sets the inner stage for the child's entrance into life, "except that life must first be school life, whether school is field or jungle or classroom" (1977:232).

The child realises the importance of finding a place among those of his own age for, as a child he is neither capable of, nor is he invited to take equal part in, the realm

occupied by adults. Consequently, the child directs all his "energies towards working on those social problems he can successfully master" (Maier 1969:53). On the one hand, the child concentrates all this energy on being productive, whilst simultaneously, on the other hand, there is the ever-present pull towards a previous level of lesser production. It is this fear of not being productive coupled with the fact that he is "still a child, an incomplete person, which tends to give him feelings of inferiority" (Maier 1969:53) .

The child concentrates his abilities on communicating with peers who, at this stage, are considered to be most significant to him (Louw 1998:53). Whilst warding off failure at any cost, the child derives a sense of accomplishment for doing tasks well - "being the strongest, best, wittiest, or the fastest are the successes towards which he strives" (Erikson 1972:233).

It is during this stage that the child develops an interest in learning and a capacity for productive work. Although the nature of productive work may vary within and among cultures, those responsible for the teaching are entrusted with the creation of successful experiences for each child and with keeping feelings of ineptness from forming. This instills in the child the need to develop a sense of mastery over that with which he becomes engaged, whilst it contributes positively to the development of self. Simultaneously the child acquires necessary skills for relating to others in a more meaningful and acceptable fashion.

The child's culture assists in the resolving of fears of inferiority. He learns by *doing* and experiments with the "rudimentary skills required by his culture. As the child learns to wield his culture's tools and symbols, the child seems to understand that this sort of learning will help him to become a competent self" (Maier 1969:54).

It is significant to note that in the child's play, the child relies much upon social aspects and incorporates this into play activities which involve real-life situations. Although boys and girls engage in gender appropriate play habits, there is a tendency for them to enter into each other's world and to participate in play that is appropriate for the opposite sex. Towards the end of the stage, play begins to lose importance and the child begins to focus on activities that involve work.

This is accompanied by the child being dependent on his parents in some areas, whilst striving for independence in other areas. The child begins to see his parents as representatives of the society in which he will be operating. Other adults such as parents' friends and friends' parents assume a new importance for the child. At the same time the neighbourhood and the school take on significant social dimensions for the child, while strangers become intriguing and important discoveries for the child.

In acquiring a sense of industry and in fending off a sense of inferiority, the child must have successfully converted many of his previous desires and yearnings into tangible and attainable goals. In so doing, the underlying fear of failure "impels the younger person to work harder to succeed, because any half-way measure, any mediocrity, will lead him too close to a sense of inferiority, a feeling he must combat in order to move on with self-assurance towards his adulthood" (Maier 1969:56).

The following four phases are not found within the age ambit of pre-school children but they do relate to their development in the ways in which the previous crises were resolved. The following sections will present, in synopsis format the focal points of these stages. This is in keeping with Hamachek (1995: 60) who maintains that more is said about the first five stages because what happens in the initial 18 years of an individual's life is critical in shaping everything that happens from that time on.

2.1.5 STAGE 5: IDENTITY versus ROLE CONFUSION

(14 years to 20 years)

The psycho-social developmental phase of identity versus role confusion characterises the adolescent stage of development which colloquially is referred to as a period of "stress and storm".

Adolescents experience physical and physiological changes that impact on their sexual development and identity formation. Many are preoccupied with trying to establish who they are and the roles that they are to play in their community. "Failure to find answers to these questions leads to conflict, indecisiveness, anxiety and loneliness" (Mwamwenda 1995:353).

> "The adolescent's mind is essentially a mind of the moratorium, a psychosocial stage between childhood and adulthood, and between the morality learned by the child, and the ethics to be developed by the adult" (Erikson 1977:236).

It is characterised by an ideological perspective towards society, with the adolescent seeking affirmation from peers and he is "ready to be confirmed by rituals, creeds, and programmes which at the same time define what is evil, uncanny and inimical" (Erikson 1977:236).

This reflects in the crisis that the individual experiences during this phase which is to make a choice compatible with himself and with the opportunities presented within society, "so society is faced with the difficulty of extending time, space, and

social freedom to the adolescent without denying its ultimate range of control and guidance over him" (Maier 1969:65).

Therefore, in the resolution of the crisis at this stage, all the adolescent's efforts are ultimately directed at clarifying his role as a member of society.

2.1.6 STAGE 6: INTIMACY versus ISOLATION

(20 years to 35 years)

The crisis of this stage arises in young adulthood. During this stage, the young adult is absorbed in the world of work and in the establishment of intimate relationships with others. Failure to develop intimacy could eventually lead to psychological isolation, and impacts on the individual's capacity to give and receive love (Louw et al. 1998:54; Craig 1996:60).

2.1.7 STAGE 7: GENERATIVITY versus STAGNATION

(35 years to 55 years)

This stage is marked by the intensity with which the adult engages in activities of productivity, creativity and procreation. At a literal level, individuals generate or produce whatever gives them a sense of personal creativity. It also heralds the individual's preparation for the following generation, by being useful as parents, workers, husbands, wives, and ultimately as members of the community who have something worthwhile to share with others. Failure to do so results in individuals becoming apathetic and stagnant in their lives (Eggen & Kauchak 1997:82).

2.1.8 STAGE 8: INTEGRITY versus DESPAIR

(55 years to 65 YEARS)

During old age, the psychosocial crisis develops as ego integrity versus despair.

The individual is faced with the dilemma of checking whether his life has been meaningful or not. The personality of the individual "is fully integrated when one develops a sense of acceptance of this one and only chance at life on earth and the important people in it" (Gage & Berliner 1991:142). In reviewing this stage, Gerdes (1988:67) says that it is at "this stage that the individual is able to see his unique place, however small in the universal order of things" .

The above has elucidated the manner in which social development takes place throughout life, with particular focus on the child. The following section will focus on the normative development of the child. These two sections have been strategically placed together as they are inextricably related to each other.

2.2 NORMATIVE DEVELOPMENT

Spodek (1993:418) and Dagar & Dhull (1994:26) have reviewed some of the literature as it pertains to children's pro-social behaviours and have concluded that their behaviours are related to their level of moral reasoning.

As indicated within this literature, Piaget's theory sets a moral theory which dovetails with his cognitive theory and could be considered as a theory of moral development. However, for the context of the present argument it has been considered more appropriate to examine Piaget in the light of cognitive development as will be done in the following chapter.

Piaget and Erikson were both fundamental to Kohlberg's theory of development, which will now be expounded upon, as it follows logically on their theories of stage development. The literature surveyed and confirmed by the works of Horowitz & O'Brien (1985) indicates that Kohlberg's theory is built upon Piaget's theories of

cognitive and moral development. As Kohlberg enjoys a certain degree of prominence presently, his theory is worthy of inclusion in this thesis.

Unlike Piaget, Kohlberg has extended his theory beyond adolescence to include development during adulthood.

Kohlberg (1981; 1984) portrays moral development in three main levels, with each level consisting of two stages. His theory assumes that the "major aspects of moral development are culturally universal because all cultures are concerned with social interaction" (Siaan & Ugwuegbu 1988:246).

LEVEL	STAGE
A. Pre-Conventional	1. Punishment - obedience orientation
B. Conventional	2. Instrumental - relativist orientation.
C. Post-Conventional	3. Good boy - good girl orientation
	4. Authority and social order -maintaining orientation
	5. Social-contract legalistic orientation
	6. Universal-ethical principle orientation

2.3 KOHLBERG'S THEORY OF MORAL DEVELOPMENT

LEVEL A

2.3.1 Pre-Conventional Stage (birth - 9 years)

At this level morality is vested in elements external to the individual and is epitomised by authority figures. In order to avoid punishment the child conforms to

the rules as they are espoused by these authority figures (Wakefield 1996:252; Slavin 1991:47).

2.3.1.1 Stage 1: Punishment - obedience orientation (Up to 5-6 years)

The child determines the goodness or the badness of his actions by the consequences of his behaviour as determined by the rewards or punishments administered by adults. On the one hand children perceive rules as being absolute and think it their duty to adhere to them. On the other hand, children refrain from engaging in behaviours that the adult world considers unacceptable because they are afraid of being caught out by the adult. For example, children who do not talk in the class prior to seeking the teacher's permission do so because the teacher, who is a symbol of authority, deems that talking without permission is a punishable offence. However, if the unacceptable behaviour is engaged in and the child is not caught out, then that behaviour is not considered to be bad.

2.3.1.2 Stage 2: Instrumental - relativist orientation (5-6 years to 9 years or so)

At this stage a child's moral development hinges on conforming to rules such that he would benefit from them. This kind of behaviour is pursued solely on the grounds that, provided the child is not hurt, he would not engage in any harmful acts that would hurt others. It would seem that what is considered to be 'right' and 'fair' is what amounts to an 'equal exchange'. This indicates the beginnings of social reciprocity; the thinking here is, "You scratch my back and I'll scratch yours" (Louw et al. 1998:379).

It would seem that the moral judgements that children make at this stage are very pragmatic. They will do good to another person if they expect the other person to

reciprocate or return the favour. A typical response at this stage will be, for example, that children will not talk in class because their silence will be rewarded by the teacher.

LEVEL B:

2.3.2 Conventional Stage (9 years - young adulthood)

Moral values reside in the performance of good and bad roles. "Children are concerned with meeting external social expectations; they value meeting the expectations of family, group, or nation by conforming to the expectations of significant people and the social order" (Dembo 1991:335). They will therefore engage in behaviours such as obeying rules to maintain the social order and to win the approval of others.

2.3.2.1 Stage 3: Good boy - good girl orientation (9 to 11-12 years)

At this stage, the child engages in behaviour solely to elicit the approval of others, rather than being driven by any moral principle or ideal.

Children earn approval by being "nice" and at times compromise their own individuality to conform to the opinion of the majority. They are repeatedly driven by the desire to co-operate and are aware of the need to consider the intentions and feelings of other people (Hamachek 1995:176).

2.3.2.2 Stage 4: Authority and social order maintaining orientation (12 years to 17-18 years)

The law acts as a determinant for conforming to rules and conventions. The individual will behave to avoid any kind of disapproval or repercussion.

It is obvious that the reason for conformity "is not so much a fear of punishment as a belief that rules and laws maintain a social order that is worth preserving. Thus, behaviour is judged as 'good', or moral to the extent that it conforms to rules that maintain social order" (Shaffer 1989:535).

LEVEL C

2.3.3 Post-Conventional Stage (adulthood)

According to Kohlberg (1981;1984), an individual operating at the post-conventional stage of moral development will be functioning at the highest stage of morality. This is characterised by the individual having a set of moral principles that are generally shared by others, yet which transcend those of distinct authority figures. In many instances, the individual operates on a personalised value system.

2.3.3.1 Stage 5: Social contract legalistic orientation

Although laws are considered to be necessary and integral to societal well-being, it could also be subject to change.

Moral judgements are distinguished by flexibility and should express the ideals of the majority of people. However, laws that are perceived to be unjust or are imposed against the will of others, as well as those that compromise the rights of the majority are considered worthy of challenge. This stage so aptly vindicates that nothing is absolute (Santrock 1995:335; Slavin 1991:47).

2.3.3.2 Stage 6: Universal - ethical principle orientation

Kohlberg (1981;1984) asserts that this is the highest moral level at which an individual can function and it becomes the individual's prerogative to define "right" and "wrong", "virtue" and "vice", on the basis of self-chosen ethical principles, enshrined in his conscience. These principles entail universal values regarding the

rights and feelings of others and his own behaviour towards them Dagar & Dhull (1994:68).

As a consequence, individuals believe in a set of universal ethical principles. However, when there is conflict between the legal domain and what is "right", the individual is guided by personal principles.

Fontana (1995:240), Munsey (1980:85) and Cochrane & Manley-Casimir (1980:214) say that the rate of progress through the six levels can vary from child to child and some individuals may never reach the highest levels in moral functioning. This is in keeping with Hamachek's (1995:175) analysis, who having reviewed Kohlberg's earlier writings suggests that only about 20 % of the population reaches stages 5 and 6 of moral reasoning and those who have reached these stages experience feelings of guilt and self-censure should they ever transgress their own principles.

2.4 CONCLUSION

This chapter has highlighted human psycho-social and moral development with special reference to the pre-school child. The theories of Erikson and Kohlberg have been focused on and these hint at some of the universal principles of development that need to be met for a child to be able to function adequately in his environment. The applicability of these theories to the South African Indian population need to be questioned ?

The following chapter will consider the cognitive development and intellectual development of the child as a logical continuation of the child's *becoming*.

CHAPTER THREE

COGNITIVE DEVELOPMENT OF THE PRE-SCHOOL CHILD

3. INTRODUCTION

This chapter will focus on the cognitive development of the pre-primary school child.

3.1 COGNITIVE DEVELOPMENT

Bruner (1960), Gagné (1977), Vygotsky (1978), Feuerstein (1979, 1980), Piaget & Inhelder (1969), and Piaget as described in the works of Ginsberg & Opper (1988) and Elkind (1980) have put forward theories on cognitive development. However, for the purposes of this discourse, only the theory of Piaget will be considered. As indicated previously, the relationship between Piaget's theory of cognitive development and Kohlberg's theory of moral development are inextricably related and therefore, both are relevant and appropriate for inclusion and discussion in this thesis.

3.2 PIAGET'S THEORY

As an organismic theorist, he considered the child to be an active being whose developmental path was dictated to both by biological maturation and experience (Atkinson 1983:14).

developmental path was dictated to both by biological maturation and experience (Atkinson 1983:14).

It follows logically from this theory that from birth, the child acts upon the environment in order to transform it. In turn, the child is changed by the environment and the consequences of his actions. The constant interplay between the biologically developing and maturing child and the environment is responsible not only for the physical development of the child but it also influences the growth of intelligence. Piaget considers intellectual development to be a function of the child's manipulation of, and active interaction with, the environment (Slavin 1991:26).

Piaget has divided cognitive development into four major stages which will be discussed later in the chapter. Each of these four stages are characterised by the evolution of new abilities that allow for major re-organisation in the child's thinking. Implicit in the re-organisation of the child's thinking are certain principle concepts which will be discussed below.

Principle Concepts of Piaget's Theory

1. Schemes:

Piaget and Inhelder define a scheme as the "structure or organisation of actions as they are transferred or generalised by repetition in similar or analogous circumstances" (1969:4). Schemes, therefore, entail generalised patterns of behaviour and actions that the child will use in dealing with objects of the world in negotiating a meaningful reality (Louw et al. 1998: 73; Slavin 1991:26). The schemes can be as simple as grasping at an object in order to get hold of something or, in other instances, they may be more complex such as learning to solve a

mathematical problem when the child goes to school. Schemes therefore help children to classify and categorise objects and events and assist them in deciding how to act towards an object or react to an event (Tuckman 1991:171).

2. Assimilation:

This is the process through which a child incorporates new experiences, concepts of objects and events into existing structures or schemes (McCown et al. 1996:32). Piaget and Inhelder are of the opinion that the assimilation of information involves more than simply taking in information, it involves "filtering or modification of the input"(1969:6). This takes place by fitting the new experience into the existing scheme without changing the scheme's essential nature at all, (if this does take place then the child will make mistakes). As the child's ability to assimilate new experience increases, so does his understanding of the environment. An example of assimilation is when a very young child who is familiar with a cow and a dog, but not with a horse, calls a horse a cow. This implies that the child has incorporated the new information viz. the horse into his existing cognitive scheme of a cow, viz. a hairy animal with four legs, a head, body and tail.

3. Accommodation:

This is the process through which existing cognitive structures are modified, or new cognitive schemes are created, in order to incorporate new information from the environment (Piaget & Inhelder 1969:6; Louw et al. 1998:74). Essentially, accommodation takes place when a new idea or object that the child is confronted with from the environment does not fit in with the child's already existing cognitive scheme. In such situations, the child's way of understanding is forced to change to fit the new experience. With respect to the example of the horse used above in explaining the process of assimilation, accommodation can take place when the child is corrected and told that the animal is not a cow but is a horse, and the child

then creates a new scheme for the concept "horse" (Louw et al. 1998:75). This new information compels the child to develop another cognitive scheme for the concept *horse*, which will have to fit in with or complement the child's scheme of cow and dog.

4. Equilibration:

McCown et al. (1996:32) consider equilibration to be the process that regulates "other influences on cognitive development and governs how people organize knowledge to adapt to their environment". Criag (1996:51) says that equilibration is basic to human adaptation and strikes a balance between the processes of assimilation and accommodation, eliminating the inconsistencies or discrepancies that exist between "reality and its picture of reality". Therefore, it would seem that equilibration is a self-regulating process through which people balance new experiences with what they already know.

Piaget's Stages of Cognitive Development:

Piaget identified four stages of cognitive development. The first stage is designated the **sensorimotor period** because it involves adapting to reality through *sensing and movement*. The second stage is named the **pre-operational** period because it entails processes related to conceptualization *prior* to using logic, while the third stage is called the **concrete operations** period because it involves using *applied reasoning*. The fourth and last stage is termed the **formal operations** period because it embraces the use of *systematic reasoning*.

1.	Sensorimotor stage	birth to 2 years
2.	Pre-operational stage	2 years to 7 years

3.	Concrete operational stage	7 years to 11 years
4.	Formal operational stage	11 years and beyond

The first two stages will be considered in greater depth as these two stages have relevance for the pre-school child, whilst a synopsis will be given of the remaining two stages.

Piaget maintains that there is an *invariant developmental sequence* of the stages. By this, he means that children progress through these stages in exactly the same order that they are listed above. There is no skipping of stages, for each successive stage builds upon the previous one, however, the antecedent stages have remnants of the previous stages.

3.2.1 Sensorimotor Stage: (Birth to 2 years)

The sensorimotor phase is divided into six distinct substages of development. Just as the developmental phases relate to, and build upon, each other so do these six substages. Piaget believed that in this stage an infant's understanding of the world is based on simple, unlearned reflexes such as sucking, grasping and looking. These are known as innate schemes (Seifert & Hoffnung 1991:58).

The following are the six phases that are integral to this stage and these will be discussed below:

1. Use of reflexes
2. Primary circular reactions
3. Secondary circular reactions
4. Co-ordination of secondary schemata and their application to new situations
5. Tertiary circular reactions

6. Invention of new means through mental combinations.

3.2.1.1 Use of reflexes (± Birth - 1 month)

The use of reflexes is characteristic of the first phase of the sensorimotor stage. At birth, the toddler's individuality is expressed by crying, sucking and adaptations of breathing responses. The baby uses the sucking and grasping reflexes to explore the environment, (Louw et al. 1998:75). The spontaneous and repetitive use of reflexes, combined with neurological and physical maturation, contributes to the infant developing habits to fit the world into his limited repertoire of reflexes (Maier 1969:104; Shaffer 1994: 109).

3.2.1.2 Primary circular reactions (± 1 to 4 months)

This phase is recognized by the infant's movement away from reflexive behaviour to voluntary movements. Infants use circular reactions which they repeat. These actions tend to be centred around their bodies (for example sucking a thumb repeatedly). These repetitive reflexes are engaged in for the pleasure that is derived from them.

This tendency to move away from instinctive new-born reflexive activity to voluntary activity is more organised. Infants are stimulated by light and sound and will constantly seek this as a source of gratification.

During this stage, the infant begins to realise that an object is separate from himself. For example when the infant drops the rattle he has been holding, he stares at where it was last, viz. his hand, and if nothing reappears he gives up. To the infant, the rattle does not have any permanence and it does not exist if it is not in his immediate experience (Clare-Stewart et al. 1985:302).

3.2.1.3 Secondary circular reactions (± 4 to 10 months)

During this third phase the child continues with the primary circular reaction patterns of the second phase, but these are repeated and prolonged by new secondary reactions, for example the "grasping" reflex changes to a "holding" reflex and infants perform these repetitive actions on the environment, rather than on their own bodies such as shaking the side of the pram so that the toy attached to the pram swings. These circular reactions are repeated because they bring satisfying sensations to the infant. This indicates that the infant becomes less centred on the self and more centred on the environment (Bukatko & Daehler 1995:289).

Maier (1969:105) categorically states that the roots for future cognitive development and understanding are acquired in this phase of sensorimotor development. A synopsis detailing the above, adapted from Maier (1969:109 -110) is presented below:

i. The child reacts to distant objects. He considers ends and means as one and begins distinguishing between cause and effect.
ii. Quantitative and qualitative evaluation begin emerging in simple experiences such as "more" or "less".
iii. The various and distinct reactions and response patterns are ultimately unified into a single action sequence.
iv. This co-ordination of separate experiences into one schema leads to an awakening awareness in the infant that he, too, is a part of the sphere of action.
v. The notion of time takes root in the individual's mind, as he begins to appreciate the concepts of "before" and "after" in the sequence of action.
vi. Symbols are understood as stimuli in the sequence of activity and act as an aid to comprehension that will lead eventually to communication. This early

awareness of stimuli as symbols also serves as an introduction to a sense of future.

vii. Variety in available patterns of action, the dawning recognition of symbols, rudimentary projecting of time, as well as increased accommodation, stress the *intentional* aspects of the child's prospective behaviour.

All of these have significance for the child's intellectual development, and once achieved, they stimulate three new processes of human behaviour, viz. imitation, play, and affect.

Imitation:

This depends upon the child's capacity to differentiate among several events and react to those selected. Imitation starts with the repetition of schemas such as seeing, hearing, grasping, smelling, and tasting, which have been acquired during the primary and secondary circular reaction stages. Santrock (1995:156) emphasises that the child will only be able to imitate events and actions that he is already able to produce. Imitation tends to be more complicated as the child's repertoires of behaviour increase (McCown et al. 1996:6).

Play:

Although the nature of play is initially hard to describe, it manifests in repetitive, cyclical activities and in the acquisition of new skills. Mussen et al. (1984:157) reiterate the hypothesis that irrespective of the nature of the play and toys that the child interacts with, he acquires new skills which facilitate intellectual development.

Affect:

Affect, or emotion, emerges as a distinguishable and separate but related activity from the child's intellectual development during this stage. As the child interacts with the environment in different ways, this impacts upon the emergence of different

kinds of emotions. The kind of meaning that a child attributes to situations evokes specific emotions that the child may experience.

3.2.1.4 Co-ordination of secondary reactions and their application to new situations (± 10 months to 12 months)

This phase coincides with the infant's first birthday. The infant uses previous behavioural achievements as a basis for adding and creating new behaviours to his already expanding repertoire. Well-used sensorimotor activities are applied to new situations. As the child repeatedly engages in random experimentation he adapts behaviour patterns in new ways to fulfill the demands of the new situation. This is highlighted by the child's ability to learn through trial-and- error. After failing a few times at getting what the child desires from the environment he will not tire but will rather try other ways of getting this. This facet of trial-and-error is distinguished by the child's discovering that there are many ways in which he is able to get what he wants.

Later, in the psychomotor stage of development, the child discovers that learning does not take place only via the trial-and-error method, and that problem-solving can be approached in a more systematic and planned fashion. Bee (1998:106) emphasises this by saying that during this substage the infant demonstrates clear "intentional means-ends behaviour". The presence of *intentionality* emerges when the means and goals in accomplishing tasks become separated, (Santrock 1995:156). An infant not only goes after what he wants, but may combine two schemes to do so, such as knocking a pillow to reach a toy. This substage is also characterised by the imitation of novel behaviour, and the transfer of information from one sense to the other (cross-modal transfer).

3.2.1.5 Tertiary circular reactions (± 12 to 18 months)

This substage develops between 12 and 18 months of age. The infant becomes aware of the existence of relationships between objects and other objects and between objects and their environment. For example, the child becomes preoccupied with the filling and emptying of hollow objects with smaller objects, or the fitting of differently shaped blocks into corresponding openings (Maier 1979:114; Bee 1998:106). The recognition of spatial relationships between objects, and the rotation and reversal of objects in space, lead to an awareness by the child of his own movements and the movements of other people in the environment. Santrock (1995:156) considers the child to be intrigued by the variety of properties that different objects possess and by the multiplicity of things that the infant can make happen to them.

At the same time the child begins to understand that the nature of causality could exist outside of himself and that he is not necessarily involved in all transactions that make an impact on him as he previously thought (Philips 1981:55; Jolley & Mitchell 1996:199).

In conjunction with the activities described above, the child increasingly becomes involved in play, which is an expressive function of his development. As the child develops, he begins to distinguish between imitation and the concept that he is playing out, and as such, play has meaning within the child's own fictitious and personal world (McCown et al. 1992:36; Hamachek 1995:153).

3.2.1.6 Invention of new means through mental combinations (± 18 months to 24 months)

This is achieved when the child is about two years old. The child realises that objects can exist despite his not being able to see them. When this occurs, Piaget

considers the child to have achieved the notion of "object permanence", which is indicative of a more advanced level of thinking (Santrock 1995:156; Bukatko & Daehler 1995:291). The child also links the object to its properties such as uses, form, size and colour.

The toddler learns that he is different from objects in the external environment and learns primarily through exploration with his senses and manipulation of the environment through motor skills. As this stage reaches maturity, the infant relies less upon his sensorimotor functions and more on his sensorimental functions (Louw et al. 1998:76).

Ultimately, all behaviour displayed by the child during this stage indicates the need for the child to evolve ways to control and develop mastery over his environment.

3.2.2 Pre-operational Stage: (2 to 7 years)

This approximates the pre-school years of the child. Jolley & Mitchell (1996:198) say that a child has reached the pre-operational stage once he has grasped the idea of object permanence and can engage in symbolic thought. In comparing the sensorimotor stage and the pre-operational stage, Slavin (1991:27) maintains that "infants can learn about and understand the world only by physically manipulating objects, while the pre-schooler has the greater ability to think about things and can use them mentally to represent objects". This could be highlighted by the letter "b" representing the word "ball" or alternatively it could also represent the sound "b".

The above aptly encapsulates what Philips (1981:70) considers to be the essential difference between the child in the sensorimotor stage and one in the pre-operational stage, viz. the former is restricted to direct interactions with the environment, whereas the latter is capable of manipulating symbols that represent the environment.

In contrast Pressley & McCormick (1995:148) admit that although there are significant advances in language and other competencies during this period it would seem that what is emphasised is the child's incompetencies, in comparison with adults, rather than competencies that they themselves possess.

3.2.2.1 Play

Play in this stage still occupies most of the child's waking hours. It serves the purpose of enlarging the child's experiences and consolidates the child's previous acquisitions. The child's play also takes on dimensions of pretence and symbolic play (Louw et al. 1998:76; Hamachek 1995:154; Clarke-Stewart et al. 1985:309). The child pretends that what he performs in play is taking place in real life. In symbolic play, objects begin representing things in reality. A piece of string could represent a snake while a crumpled piece of paper could represent a rat. Together these could be symbolic of a snake possibly attacking a rat.

3.2.2.2 Imitation

Piaget & Inhelder (1969:54; Maier 1979:121; Gage & Berliner 1991:109) consider imitation of others and symbolic imitation of others as spontaneous processes at this stage in the development of a child. A child could put on his father's spectacles and imitate his father's behaviour through many of the rituals in which his father engages. Alternatively he could put on a toy stethoscope and would consider himself to be a doctor. He may then engage in the entire examination process that a doctor would. It seems that the imitation process is contingent upon the child's experiences, whilst it simultaneously furnishes the child with a wealth of new symbols for objects and enriches his repertoire of available behaviour.

3.2.2.3 Language development

This stage is associated with phenomenal development in the child's linguistic abilities (Hamachek 1995:155; Bukatko & Daehler 1995:291). Language is used by the child to develop concepts. This is accompanied by the child depending largely upon experience in the learning of different linguistic forms which are embedded in the deep and surface structures of language. With the acquisition of phonation, the child is able to use language to convey his own experiences. As the child's language acquisition becomes more sophisticated, he not only repeats, but gradually begins replacing activity with words (Maier 1979:120).

3.2.2.4 Development of thinking

Although language and concept development take place at an incredible pace, the development of thinking during the pre-operational stage is still rather primitive.

This stage is marked by the self-centred and egocentric development of the child. The child believes that everyone sees the world the way he does. He views his social and physical worlds only as he experiences them. This limited view of things leads him to believe that everyone thinks as he does and understands him without his having to convey his thoughts and feelings. This indicates that the child is incapable of putting himself into the shoes of another person and cannot appreciate that person's point of view (Bukatko & Daehler 1995:291; Eggen & Kauchak 1997:38).

Children at this stage of development in their cognitive processes lack what Piaget calls conservation (McCown et al. 1996:36). This takes place because of *centration* - which is the "focussing or centering, of attention on one characteristic to the exclusion of all others" (Santrock 1995:212). Conservation is the principle in which the amount of a substance stays the same regardless of changes in shape or the number of pieces into which it is divided (Eggen & Kauchak 1995:38). Essentially, the child operating in this phase focuses only on one facet of the process at a time.

Conservation is relevant to concepts, viz. mass, weight, volume, number, reversibility, and mass-weight-volume. Having acquired these concepts, then, the child is ready to leave the pre-operational stage of thought and enters the operational stage.

3.2.2.5 Mass

To highlight conservation of mass, two pieces of clay rolled into balls of the same mass are given to the child. Thereafter, one of the two balls is rolled out into a long cylindrical shape. At the age of 4 the child will indicate that the longer of the objects contains more clay. However, when the child has acquired the concept of the conservation of mass later on, he will recognize that the amounts of clay in the two different shapes are the same (Jolley & Mitchell 1996:200).

3.2.2.6 Weight

Two round balls of equal "weight" are placed on a scale to balance each other. Thereafter, one of the balls is rolled out into a different shape to determine whether the child realises that, irrespective of the new shape of the ball, it still balances the round ball. Insight into this is only achieved sometime after the child has attained conservation of mass.

3.2.2.7 Volume

The classic example used in the literature to depict this concept is the pouring of milk. If milk is poured from a thin tall container into a shorter wider container in the presence of a child operating at this stage, the child will argue that there is more milk in the tall glass than in the shorter, wider container. This points to the fact that the child is capable of focusing only on one facet of the process at a time, whilst ignoring all of the other facets which are present (Slavin 1991:29; Louw et al.

1998:79; Bukatko & Daehler 1995:292).

3.2.2.8 Conservation of Number

An example used to highlight this is the example of blocks. In situation A, the child is presented with two identical rows of blocks. The child agrees that each row has the same number of blocks. In this particular situation, the pre-operational child will be likely to respond by saying that there are the same number of blocks, because the rows are equal in length.

In situation B, the child is presented with the same number of blocks but one row of the blocks been lengthened by spreading the blocks out. The child is then asked whether one row is longer than the other. The child is then asked why the rows differ in length. The pre-operational child will more likely say to the examiner that the shorter row is so because there are fewer blocks. Just like in the example of the milk, the child in this situation focuses only on one aspect of the problem, viz. the length of the rows and ignores the other aspects, viz. the density and number of the blocks.

3.2.2.9 Reversibility

During this stage there is a relative inability to reverse operations. Irreversibility is another landmark that characterises this stage of development in the pre-school child's thinking processes. Operations such as 3+2=5 and then 5-3=2 cannot be performed by children at this age. Indeed, if the child was capable of this operation then he would be mentally capable of reversing the pouring of cooldrink from a long container to a flat container, noting that in the reverse process, the quantity of the cooldrink would remain the same.

Children at this stage are considered to be "intuitive" and with their level of maturity,

they become capable of making "classifications" even though they do not really understand why or how. As the child grows older, he develops a gradual awareness of the conservation of mass (5 years), weight (6 years), and volume (7 years), i.e. he sees that an amount may remain the same if it is transferred to a different size container (Hamachek 1995:495). It needs to emphasised that the ages indicated are approximations and that the more intelligent the child, the sooner the different stages are reached.

While the process of *centration* helps to explain some errors in the perceptions made by children at this stage of development, it also assists in understanding the reasons for the child's thinking at this particular time.

Piaget's remaining stages of development go beyond those of the pre-primary school child, and thus, only a synopsis will be entered into here.

3.2.3 Concrete Operational Stage: (7 to 11 years)

In this stage of development, the child becomes capable of logical operations but this is only possible with concrete objects.

One of the tasks that the child is capable of at this stage is arranging things in order according to specific attributes such as size, weight, shape or colour. Once this ability is achieved, the child is said to have mastered the skill known as "transitivity", which speaks of the child's ability mentally to arrange and compare objects.

Another ability displayed by the child at this stage is referred to as his ability for "class inclusion". The child becomes capable of making comparisons within and between classes.

Flavell (1985:103) describes the concrete operational child as one who takes "an earthbound, concrete, practical-minded sort of problem-solving approach, one that persistently fixates on the perceptible and inferable reality right in front of him".

3.2.4 Formal Operational Stage: (11 years to Adulthood)

This stage of development begins more or less at puberty and continues into adulthood. It is typified by the child developing the ability to think logically and comprehend abstraction.

The child moving into adulthood is able to work out logical possibilities without having to determine which ones did occur in the natural world and which ones did not. Inherent in this development of the child, is the child's ability to explore the systematic exposition of logical alternatives.

The child develops the competency to think about "ideals", and to understand the notion of the future, as well as cause and effect relationships. Integral to his development in this stage, is his ability to develop and test hypotheses (Gage & Berliner 1992:11; Hamachek 1995:103).

3.3 CONCLUSION

This chapter has explored cognitive development of the pre-school child as encapsulated in Piaget's theory of cognitive development. In terms of the research project at hand, it is hoped that Piaget's theory of cognitive development will enable the researcher to understand the process of cognitive development in the Indian pre-school child.

The following chapter will focus on the intellectual stimulation of the pre-school child.

CHAPTER FOUR

BACKGROUND AND INTELLECTUAL STIMULATION OF THE PRE-SCHOOL CHILD

4. INTRODUCTION

This chapter will explore the home background, parental involvement and areas of stimulation that the child could be exposed to in the promotion of his cognitive development.

4.1 PARENTAL INFLUENCE

Psychologists and educators have over the years recognized the important influence that parents can have on the child's development (Clausen 1968; Macoby & Martin 1983; Becher 1986; Sonnenschein et al 1992). Parents are often viewed by psychologists as powerful agents of socialization (Clausen 1968; Macoby & Martin 1983) who are responsible for transmitting cultural goals and values and socially acceptable behaviours.

On the other hand, educators are convinced that parents act as the child's "first teachers" whose responsibilities extend into the cognitive as well as the socio-emotional domains (Becher 1986:87).

Sonnenschein et al (1992:5) have indicated that middle class mothers of 3,4 and 5 year-old children intentionally teach their children in different situations, different activities with differing emphases, with the sole purpose of promoting cognitive and social development.

Some of the skills that the parents taught focussed on emergent literacy and mathematical skills, gross and fine motor skills, communication skills and pro-social behaviour. This is in keeping with Beck (1986) who has developed an exhaustive list of activities that parents could engage in, in different areas which includes language, reading, second language, maths, science, perception, concept formation, and toys to "raise a brighter child" and "increase his or her I.Q".

This links with Hunter et al (1987: 252) who have concluded that the infant's changes in knowledge, vocal co-ordination and social skills could be attributed to the nature of the infant's social-constructive interactions with mothers and fathers.

4.1.1 Motivation

Gottfried et al (1994:104) agree that parents play an important role in the child's development. However they go on to explain that it is not the behaviour *per se*, but the child's intrinsic motivation and ultimately his academic motivation and achievement from primary school to secondary school that is impacted upon by parents. This confirms the findings of the longitudinal study of Portes et al (1988:78) concerning early-age intervention and parent-child interaction and their relation to student academic achievement in later years.

4.1.2 Significant Others

Lobel & Bempechat's (1992:529) review of literature has indicated that children's academic self-concept is influenced by the evaluations of significant others. This seems

to correlate with Alexander & Entwisle (1988:253) and Entwisle & Hayduk (1988:147), who suggest that parents' achievements, beliefs, attitudes and values not only guide their behaviour with their children but appear to have an influence on their children's own beliefs. However the findings of Cornell et al (1995:198) seem to be in contradiction to the above. They suggest that there is no evidence of a relationship between self-concept and achievement for minorities in America referring to the Afro-American and Hispanic children.

On the other hand, Phillips (1987:1310) reported that high achieving children's perceptions of academic competence were influenced more by parents' perceptions than by the children's record of achievement.

4.1.3 Enrichment Programmes

Moon (1995:206) says that enrichment programmes in which the early identified gifted and talented children participate can have subtle effects on their family systems. His investigation into the Purdue Model has revealed that these programmes have a moderate positive effect on the family.

Moon (1995:206) suggests that parents of the gifted child encourage the child's talent by being more responsive not only to the enrichment programme that the child attends, but by showing more interest in the child's school-related activities. This concurs with Deittman & Colangelo (1980:158) who observed that the involvement of parents in the education of their gifted children can be a positive force. Moon (1995:207) also found in homes where "intellectual curiosity, large vocabularies, creative thinking, independent learning and freewheeling discussions were part of the family culture", giftedness seems to flourish.

4.1.4 Parenting

Penney & Wilgosh (1995:1) acknowledge that parents of children with special abilities or gifts may have concerns in raising their children, particularly with regard to home and school relationships. Gallagher (1988:155) and Hackney (1981:51) indicate that within the school system, when parents of specially talented children express concern for their child and advocate on behalf of the child, they are considered to be "pushy" because teachers believe that these parents magnify their children's abilities and put excessive pressure on them for high achievement in all areas, creating the impression that "other children are inferior and by association the children of these parents are superior".

On the other hand, Davis & Rimm (1985:356) indicate that some parents of gifted children will deny their children's special abilities in an attempt to keep them "normal" and "well adjusted".

4.1.4.1 Parental attitudes

Stoppard (1993:74) concurs with the above, but emphasises that the parent's general attitude to parenthood will affect the child's experiences as he grows up. She goes on to explain that if parents believe that a marriage is incomplete without children then it is obvious that these parents will await the arrival of the child and will prepare for it. They will welcome their new roles with enthusiasm without having a romanticized picture of children and parenthood.

4.2 POSITION IN FAMILY

The number of children in the family affects a child's development. Children with many brothers and sisters share parental attention. Kendall (1990:102) and Stoppard (1993:78) indicate that the spacing of children is crucial with a minimum of two and a half years to three years between siblings, such that children have optimum time with parents.

This links with birth order and sibling rivalry. Stoppard (1993:77) developed a comprehensive list of characteristics attributed to birth order which is presented in tabular form whilst Kendall (1990:101-103) has included some of these characteristics in discursive form.

4.2.1 First Born

- Uncertainty
- Mistrustfulness
- Insecurity
- Shrewdness
- Stinginess
- Dependency
- Responsibility
- Authoritarianism
- Suggestibility
- Excitability

4.2.2 Second Born

- Independence
- Aggressiveness
- Extroversion
- Fun lovingness
- Gregariousness
- Dependability
- A placid and even temperament

4.2.3 Third Born

- Aggressiveness
- Distractibility
- A craving for demonstration of affection
- Jealousy
- Being plagued by feelings of parental neglect
- Inferiority
- Inadequacy
- Proneness to behaviour disorders

4.2.4 Last Born

- Security
- Confidence
- Spontaneity
- Good-naturedness
- Generosity
- Being spoiled
- Immaturity
- Extroversion
- An ability to empathise
- Feelings of inadequacy
- Inferiority
- Sibling rivalry
- Envy and jealousy
- Irresponsibility
- Happiness.

From Stoppard's synopsis of position in family it can be concluded that position in family does have an impact on the child's development and will possibly influence the way adults adjust and relate to them.

It is also well known that the number of children in the family also affects the child's development. In families where there are many siblings, there is competition for the parental affection between the weaker and stronger children accentuating the sibling rivalry that is already present.

This could also lead to competition for the limited material resources that will have to be shared between the siblings, with some getting more than others and possibly heightening the resentment and bad feelings that are already present.

4.3 GENDER

Gender differences are a direct consequence of hormonal secretion (Jolley & Mitchell 1995:377). Both sexes produce androgen, the male hormone, and oestrogen the female, with boys producing more androgen and girls oestrogen and it is the predominance of the appropriate sex hormone that ultimately is responsible for the differences in their sexual development (Papilia & Olds 1990:355; Gerdes 1989:130).

However, the indirect effect on sex and gender role development comes from the environmental conditions to which the child is exposed. Papilia & Olds (357-361) in a review of the literature have indicated that children are not born into a gender role but are socialized into it by their parents. This could therefore be attributed to the different ways in which boys and girls are treated for the gender-typing that parents may consider to be appropriate for them.

The following section of the thesis will explore issues around daycare and the pre-school.

4.4 DAYCARE

Spodek et al (1991:23) suggests that there is disagreement about when child care centres came about, but there is a certainty that economic necessity and the need to free women for work in factories and hospitals as a consequence of the first and second world wars, prompted their widespread development.

Although Leach (1994:88-89) acknowledges that daycare centres fulfill a need in the community she is adamant that "daycare centres seldom meet those infant needs". Spodek and Saracho (1991:46) have accused the day nurseries of acting only as "custodial agencies" concerned with the caring for children rather than with educating them.

Clarke-Stewart (1991:105) disagrees with the above arguments for her extensive study on child care arrangements has revealed that the social and intellectual development of children in child care centres, whether they were there full-time or part-time, were advanced over that of the children who were in home care of their mother or the baby-sitter.

The differences in the child's development are attributed to the "educational lessons, opportunities to practice skills and follow rules with a variety of peers and non-parental adults, and encouragement of independence by non-authoritarian teachers - experiences that are qualitatively different from the experiences most children have in home care environments" (Clarke-Stewart 1991:105).

Smart & Smart (1989:123) argue that despite the various kinds of family arrangements at home or the different kinds of care-giving the primary responsibilities of the care-givers are:

> "keeping the baby safe from injury and illness; providing adequate food at appropriate times; keeping the baby clean; providing stimulation and interesting experiences; managing rhythms of daily life that make a good fit between the competencies of the baby and the optimal functioning of the family".

4.5 PRE-SCHOOL PROGRAMMES

Spodek et al (1991:27) in tracing the history of nursery school and pre-school development indicated that it

> "was to provide children of the poor the same advantages in growing up that were available to children in wealthier homes. Good health practices, medical examinations, adequate nutrition, cleanliness, fresh air, and proper exercise were all elements of the nursery school. These, combined with a worthwhile educational program, would support the total development of the child".

Many research studies have reported on the positive effects of pre-school education. The best known of these studies has been the High Scope Educational Research Foundation Perry Pre-school Project in the United States of America which reported that young children who were living in disadvantaged communities from minority groups and had attended a good pre-school out-performed similar children who had not done so, on intelligence and school achievement tests (Schweinhart & Weikart 1989:173; Weikart & Schweinhart 1987: 253; Atmore 1993:130).

Atmore (1993:131) in reviewing the longitudinal evaluation studies of Short and Biersteker in South Africa found that middle-class children who attended pre-schools obtained higher scores on intelligence and language tests than children from lower-class homes. Atmore (1993:133) concluded that:

> "Pre-school education programmes can make a difference, and have lasting effects on the development and scholastic achievement of disadvantaged children. Intervention at the pre-school level is most effective for children from families who can provide an educationally supportive environment during their school careers".

In confirming the above, Lay-Dopyera & Dopyera (1990:88) say "children who do not attend pre-schools and who lack play companions in their neighbourhoods are often 'slower' in developing the necessary social abilities", that are extremely important to the child's overall personal development.

4.6 STIMULATION

Conclusions from Ludington-Hoe's (1988:21) unparalleled legendary study reveal that infant stimulation

> "begins at birth if not before. Contrary to commonly-held belief, infant stimulation is not detrimental to an infant's development. Instead, it is necessary since everything a parent does to, for and with a child is a form of sensory stimulation. Without sensory stimulation during infancy, the infant will not survive".

The study also revealed that infant stimulation is not the bombardment of the infant with new elements of the environment but rather it is the provision "of routine care-giving

enhanced by knowledge of how it benefits the infant and what the infant's particular preferences might be (Ludington-Hoe 1988:21).

The above principle was encapsulated in Pasnak's study (1987:359) which embarked upon the enhancement of kindergarten children who lagged in cognitive development. He enhanced the children's environment to develop their cognitive skills and found that after a certain period of exposure their gains were greater than those of the control group. This was attributed to the principle of "routine care-giving" and the benefits that would accrue with the participants.

Olenchak (1995:385) concurs with the above, but specifically says that enrichment of gifted children has a significant positive impact on the children's attitude towards school, self-concept and creative production.

4.7 HOME ENVIRONMENT

Stoppard (1993:124) argues that one of the ways in which a child's development can be encouraged is to foster creative play in an inviting environment. This needs to be complemented by parents creating an appropriate emotional climate at home to stimulate the child to learn and foster his growing mental abilities (Beck 1986:54).

Beck's review of long-term research projects has indicated that the child's intelligence develops to a higher degree when the attitude towards him is warm and democratic, rather than cold and authoritarian. In homes where

> "parents were warm and loving, where they took time to explain their actions, let children participate in decisions, tried to answer questions, and were concerned about the

> excellence of performance, there was an average increase in I.Q of about 8 points" (Beck 1986:54).

This is linked to parents keeping the child in the real world by assisting the child to set realistic goals for himself so that his self-concept is left undamaged. Stoppard (1993:75) is of the opinion that the environment that parents create for the child should not limit his opportunities for learning but should open more vistas for the child so that he will be able to reach his full potential. Although encouragement and stimulation should be fostered by parents, Stoppard (1993:75) cautions that the timing of such stimulation needs to be appropriate, otherwise regardless of how much effort a child puts into his learning, he cannot learn until he is developmentally ready.

4.8 PARENTS AND ACTIVITIES

Beck (1986) has detailed activities in which parents could engage the child to promote learning. Her argument that parents can raise brighter children is based upon the following premises (1986:24-53):

1. Children do not have a fixed intelligence or a pre-determined rate of intellectual growth, and the child's level of intelligence can be changed by his environment, especially during the child's early years.

2. Early stimulation produces changes in the size, structure, and chemical functioning of the brain.

3. Although heredity does limit a child's intellectual functioning, this ceiling is so high it has not been reached.

4 Changes in the child's mental capacity is greatest when the brain is growing most rapidly. From birth onwards the brain grows at a decelerating rate.

5. The child's brain has developed half of his total intellectual capacity by the time he is four year's old and 80 percent by the age of eight. After the age of eight, irrespective of the type of schooling and environment the child is exposed to, his mental abilities will only be altered by about 20 percent.

6. The cortex of the child's brain is programmed by means of sensory stimuli that the child sends to it via the nerve pathways from his eyes, nose, ears, mouth, and tactile and kinesthetic senses. It is assumed that the more sensory stimuli with which the child activates the brain, the greater will be the child's brain capacity to function more intelligently.

7. There is a time limit within which the brain cells can be easily activated.

8. There exists sensitive periods in the development of the child's brain when the growing brain makes certain kinds of learning easy to acquire. After these sensitive periods, it is difficult to acquire learning associated with it.

9. There is a strong positive correlation between intelligence and the development of speech.

10. The child is able to acquire a second or third language more easily during the first years of his life. This is attributable to the brains special physiological characteristics that are present then.

11. The interaction of younger children with computers offers evidence of their unique ability to learn. As children learn to communicate with computers, it will impact upon the way they go about other kinds of learning.

12. The child has an in-built desire to explore, investigate, to try, to seek excitement, and to learn by using all his senses. This drive is very similar to the primary innate desires that the child has, like hunger and thirst, and the avoidance of pain.

13. The child has the compulsive drive for competency, and an inborn desire to do and learn how to do. He manipulates, handles, tries, repeats investigates, and seeks to master his environment for the pleasure of such activity.

14. Learning for children is intrinsically enjoyable. Children do so voluntarily when their efforts are not thwarted by pressure, competition, extrinsic rewards, punishment or fear.

15. The more new things that a child sees and hears, the more new things he will want to experience. It stems from the argument that the greater the variety of the child's environmental stimuli, the greater will be his capacity for coping with other stimuli.

It is obvious from Beck's premises outlined above that the range of activities that the child is engaged in will contribute to the realisation of his full potential intelligence.

Anderson et al (1989:4) say that parents want their children to have the best possible start to life. However they "need only advice and suggestions - not instructions on how to prepare their child" for the full realisation of his potential. In so doing they prepared an

exhaustive list of activities that cover the following skills that the child could engage in for self-actualisation:

- Motor skills and movement
- Speech and language skills
- Social skills.

Simon (1989) in her book *101 Amusing Ways To Develop Your Child's Thinking Skills and Creativity,* believes that learning is fun and does not consist of rote memorization of facts. She is of the opinion that learning is the acquisition of thinking skills which are embedded in the skills of logic and reason. She adopts the same stance as Anderson et al (1989) and has also prepared an extensive list of fun activities that parents and children could embrace for the promotion of cognitive development. The activities that she postulates are arranged around the following areas:

- Logic and Classification
- Reading and Language Arts
- Maths
- Science and Social Studies
- Motor Development and Self-Awareness
- Art and Creativity.

Dodson (1990:255) is of the opinion that "school" begins at home before the child goes to school. He suggests that parents stimulate their children as much as possible. Referring to animal research at the University of California at Berkeley, he says that "an enriched early environment in white rats cannot only develop superior problem-solving adult animals, but can actually produce changes in anatomy and chemical characteristics of the brains of the rats". The findings with respect to the relationship between

stimulation, brain size and chemical production in the brain correlates with the findings of Clark (1986), Beck (1986) and Jolley & Mitchell (1996).

In reinforcing his ideas that stimulation is important for cognitive development and success Dodson (1990:272-299) has also developed a list of games and activities in the following areas that parents and children could engage in to promote stimulation:

- language development
- reading
- mathematics and counting
- numbers and symbols.

Shaw (1993:130) believes that there is a positive correlation between speaking to the child, language development, and learning. As a consequence she put forth ideas whereby talking between children and parents could be used to facilitate the process of learning. Lindon & Lindon (1993:43) agree with Shaw that talking is a good mode to promote cognitive development. They go on to argue this point by suggesting that basic communication in the family is an excellent way not only to promote cognitive development but also a means of encouraging independence in children. They also suggest activities that parents and children "must do together" to encourage thinking.

Clark (1994:8) argues that the basis of language and reading skills are should be laid in the home and not in the school. As parents teach children the value of speech, the art of conversation and listening, they also share the fun of reading good books and experiencing ideas through books with the children. This makes parents ideal partners in teaching children the art of reading and writing. As children go through different stages in the process of reading and writing development, parents consciously and

unconsciously engage the child in activities that promote the development of these skills which they ultimately believe will impact positively on the child's cognitive development.

Atkinson (1994:15) is adamant that maths is just as important as language development in the child's early years and is dependent upon a positive and stimulating learning environment that parents create for the child. This should be accompanied by parents helping the child to learn the language of maths by "talking maths to him", which is "embedded in the language of play in the years before schooling starts" (1994:26).

Atkinson (1994), like the authors described above, has developed a progression of mathematical activities and games that children, parents and the family could simultaneously engage in to promote and enhance the child's mathematical thinking. She believes that these activities need to be practical, fun, be included in play and in most instances could be incidental.

4.8.1 Play

Morzollo & Lloyd (1996:3) and Stoppard (1993:124) are convinced that play is the natural way in which a child learns. Morzollo & Lloyd (1996:3) say that

> "it is through play activities that the child learns to concentrate, to exercise his imagination, to try out ideas, to practice grown-up behaviour, and to develop a sense of control over his world".

Stoppard (1993:124) concurs with the aforementioned by saying that "for children play and learning are not opposites; children benefit from 'learning' situations that are enjoyable".

Orr (1992:70) reinforces this idea by indicating that play contributes to the total development of the child (intellectual, linguistic, physical, social, emotional) in the following ways:

4.8.1.1 Intellectual

Play contributes to the solving of problems, the making of choices, and the reaching of conclusions; it promotes the ability to concentrate and to arrange knowledge.

4.8.1.2 Language

By means of play the child learns to speak and to communicate with others and an exchange of thoughts takes place.

4.8.1.3 Physical

Play develops the senses, body control, motor ability, co-ordination, and muscular control. In so doing, the child gets "rid of excess energy" not used in other other energy expending activities like thinking and socialising.

4.8.1.4 Social

The child learns to co-operate, to take turns and to identify with the role expectations which adults value. The child also becomes aware of his influence on others, and how his or her behaviour can make people angry or happy.

4.8.1.5 Emotional

Play gives expression to feelings. The child learns to take other people's feelings into consideration, he learns to control his environment and to develop a positive self-image. Play also provides the child with pleasure as well as an outlet for tension.

Although, Presser (1990:63) agrees with the above ideas she says that play for children

"is practice and preparation for life".On the other hand she goes on to say that no parent needs to be taught how to play with an infant, for all parents engage in the universal game of "getting a child to smile and coo".

Therefore, it becomes the parent's responsibility to provide a stimulating environment that is both versatile and safe for the promotion of the development of the total child, with the gifts of "affection, attentiveness, respect, forgiveness and a sense of humour", (Morzoll and Lloyd 1996:1).

4.9 CONCLUSION

This chapter explored issues around the child's background and stimulation at home with parents playing an significant role in play and stimulation of the child.

The next chapter will focus on the Research Design used in this research project.

CHAPTER FIVE

RESEARCH DESIGN

5. INTRODUCTION

This chapter details the methodology that will be used to empirically investigate The Background of the Gifted Indian Pre-school Child. It will look at factors that have contributed to the development of the gifted child described in the previous chapters.

5.1 TYPE OF RESEARCH

The researcher has chosen a combination of qualitative and quantitative research techniques in an empirical investigation which will be detailed below. Cohen & Manion (1991: 269) and Johnson (1994: 7) consider this method of data collection to be called triangulation. They argue that it is a technique of research to which many subscribe in principle, but which only a minority use in practice.

5.1.1 Triangulation

Cohen & Manion (1991:269) define triangulation

> "as a technique of physical measurement: maritime navigators, military strategists and surveyors, for example, use (or used to use) several locational markers in their endeavours to pinpoint a single spot or objective.

> By analogy, triangular techniques in the social sciences attempt to map out, or explain more fully, the richness and complexity of human behaviour by studying it from more than one standpoint and in so doing, by making use of both quantitative and qualitative data."

Denzin (1978:295) considers triangulation to be a multi-method approach to research in the social sciences which could eliminate bias or distortion of the researcher's perspective and which could also assist in overcoming the problem of "method - boundness", where one method is considered to be "superior to all others" (Cohen & Manion 1991: 270).

These sentiments are echoed by Berg who sees triangulation as a means whereby the researcher obtains a "better, more substantiative picture of reality; a richer; more complete array of symbols and theoretical concepts; and a means of verifying many of these elements" (1998:5).

5.2 MEDIA AND CRITERIA USED IN THE IDENTIFICATION OF GIFTEDNESS

Feldhusen (1993:357) mentions that a number of researchers are of the opinion that multiple selection criteria should be used in identifying gifted pupils. In keeping with this principle, the researcher incorporated the following criteria in his selection of the sample for the empirical study: HSRC criteria, parent nomination, teacher nomination, peer nomination, and individual intelligence tests.

5.2.1 Screening of Pre-schoolers Considered to Be Gifted

5.2.1.1 HSRC criteria

The HSRC has compiled a comprehensive list of criteria which can be used in identifying pupils with giftedness in specific areas such as:

- aptitude, interest and proficiency in a specific academic field;
- creativity;
- leadership ability;
- aptitude for and command of language;
- talent for acting ;
- talent for singing or musical accomplishment;
- ability, interest, as well as motor and rhythmic skills for dance;
- aptitude and dexterity in mechanical or other design;
- artistic talent for creative arts; and
- kinetic ability (Haasbroek 1988: 81-82).

5.2.1.2 Parent nomination

Parents were notified of the aims of the research project and the above criteria were discussed with them. They were then asked to nominate children to participate if they considered them to be gifted in terms of the above. However, they were also notified that those children who displayed mental or academic giftedness would be given preference for inclusion, as this was the circumscribed area of study.

As different cultures value different abilities, the researcher had to be sensitive to the specific needs of the Indian community. "Each culture defines giftedness in its own image, and in terms of the abilities that culture values" (Kirk, Gallagher & Anastasiow 1993:123). Attributes such as participation in Indian classical music and

dance were considered, as well as parents' perceptions of giftedness in situations believed to be uniquely indigenous to the Indian population.

This cultural specificity in conjunction with the parent checklist (Appendix 1) adapted from Haasbroek (1988:378-380) was used to verify the child's nomination for participation. Davis & Rimm (1985:60) argue that parents are more successful at identifying giftedness than teachers, and therefore, parent nominations should be used more frequently.

5.2.1.3 Teacher nomination

In contrast to the above view, the contribution of teachers to the identification of gifted children cannot be ignored. Research has indicated that teacher nomination, when used in conjunction with other techniques, is gaining support and is also considered to be accurate (Hoge & Cudmore 1986:191; Gagné 1994: 126).

The teacher nomination checklist (Appendix 2) adapted from Haasbroek (1988: 375-378), was completed by teachers for potential participants in the empirical investigation.

5.2.1.4 Peer nomination

Peer nomination is also considered to be an effective method of information gathering. However, it was found that this method is only useful in conjunction with other identification procedures and not on its own, for it is merely an indirect method of measuring giftedness.

According to Kokot (1992:61)

> "peers are especially accurate when asked to identify leadership ability, organizational talent, problem-solving and talent. They are somewhat less reliable with their identification of scholastically able peers and those with the ability to solve abstract problems."

An adapted peer group nomination checklist (Appendix 3B) was administered orally by the teacher but pupils had difficulty in following the instructions. It seems that the teacher did not give the instructions clearly. This was compounded by the teacher wanting to record the results of the nomination, while simultaneously giving instructions to the children. Consequently, the peer nomination was refined to include only three questions, as indicated in Appendix 3B.

5.3 INDIVIDUAL INTELLIGENCE TESTS

Although there is much controversy about the value of intelligence tests being used for the identification of giftedness, some researchers are of the opinion that adequate intellectual capacity is a pre-requisite for giftedness (Haasbroek 1988:52).

The controversy about the use of intelligence tests to identify gifted pupils is compounded by the fact that most South African Individual Intelligence tests depend to a great extent on the Stanford-Binet Intelligence Scale (S-B) and other overseas tests and will therefore not be free of cultural bias (Craig in Haasbroek 1988:55). This is in keeping with Clark's (1983:416) argument that the Stanford-Binet Intelligence Scale discriminates against pupils from a poor socio-economic background and against those who are culturally diverse.

Despite the controversy and inherent imperfections in the use of intelligence tests, it must be emphasised that the tests were used solely as an initial screening device and not as an intensive identification tool. Although they are controversial, Kokot maintains that "although the trend today is to move away from the reliance on IQ tests as infallible and the sole methods of identifying giftedness, the impact they made on gifted education and the value they still hold as a medium for the understanding of high ability warrants a study of the ways that intelligence is measured" (1992:16). However, the legitimacy for its use is found in it not being used on its own but rather in collaboration with other identification media.

5.3.1 The Junior South African Individual Scales (JSAIS)

Although the JSAIS was used as part of the identification process it could be argued that it is unsuitable for use on Indian children, as they were not part of the norm population. However, Van den Berg (1985) has developed an intensive document that details how the JSAIS could be used for testees from South Africa, who were not included in the norm population.

5.3.1.1 Purpose of the JSAIS

Owen & Taljaard (1989:99) indicate that the JSAIS has three main aims:

i. to measure as many of the intelligence related mental activities which are associated with effective functioning at school as possible;
ii. to measure the general factor of intelligence; and
iii to act as a diagnostic tool for the detection of mental retardation in children.

5.3.2 Rationale

The construction of the JSAIS was made on the assumption that "intelligence may be regarded as consisting of related problem-solving abilities, some of which are more closely associated with effective functioning at school" (Madge 1981:5), and that the

total intelligence score on the intelligence scale is represented by the general factor of intelligence typically referred to as Spearman's g factor.

5.3.3 Subtests and Subscales

Although twenty two subtests were conducted, only twelve were used in the compilation of the Global IQ (GIQ) Scale. The Global IQ Scale consists of four subscales, namely a Verbal IQ Scale (VIQ Scale), a Performance IQ Scale (PIQ Scale), a Numerical Scale (NUM Scale) and a Memory Scale (Memory Scale).

The composition of the different subscales are detailed below:

VIQ Scale: Vocabulary, Ready Knowledge, Picture Riddles, Word Association, and Story Memory.

PIQ Scale: Form Discrimination, Absurdities A (Missing Parts), Absurdities B (Absurd Situations), Block Designs, and Form Board.

NUM Scale: Number and Quantity Concepts, and Memory for Digits.

Memory Scale: Story Memory. Memory for Digits, and Absurdities A (Missing Parts).

Owen & Taljaard (1989:102) indicate that in the calculation of the Global Intelligence Scale the following subtests are not included:

Picture Series, Social Reasoning, Grouping, Word Fluency, Picture Association, Picture Analogies, Gestalt Completion, Puzzles, Memory, Objects and Figures, and Copying.

5.3.4 Test description

The separate test content, aims and rationale have been included as Appendix 4 to the thesis. This is an adaptation of the Manual for the Junior South African Individual Scales (JSAIS) (Madge 1989:18-42).

In combination with the above identification criteria, the following empirical techniques were included for the investigation: administration of JSAIS, administration of a questionnaire, feedback sessions and interviews. These techniques will be detailed in the appropriate sections .

5.4 POPULATION

The population consisted of pre-schoolers, of Indian origin, located in the previously designated Indian township of Lenasia South, a township south of Johannesburg. Lenasia South was established in the mid- nineteen eighties to accommodate the influx of Indian people from Natal and those who the established township of Lenasia proper could no longer accommodate. Presently it has a population of approximately fifty thousand people from working class to upper middle class status, with the majority of the people designated as 'middle class'.

5.4.1 Sampling Procedures and Choice of the Research Cohort

The researcher consulted officials of the Gauteng Department of Education, pre-school teachers, parents, Unisa: Institute for Social and Health Sciences, Johannesburg College of Education: Centre for Gifted and Enrichment Education, as well as people whom the researcher thought would be interested in the research project. This group of people and organisations consulted helped to publicise the

project as well as to identify potential children for participation in the research project.

The researcher met with the pre-school teacher and parents to brief them about the nature of the project and their children's possible participation. The researcher screened 83 pre-schoolers using the parent, teacher and peer nomination forms at pre-schools in the Lenasia South area.

Of the 83 pre-schoolers initially selected, only 58 met the minimum criteria and were chosen to be considered for inclusion in the next phase of the research design, viz the administration of the JSAIS.

5.5 ADMINISTRATION OF THE JSAIS

Only 51 parents of the 58 pre-schoolers who satisfied the minimum criteria on the nomination forms, were prepared to have their children included in the experimental group. The JSAIS was then administered to the 51 pre-school children by the researcher, intern psychologists and psychometrists who were employed at UNISA: Institute for Social and Health Sciences, to identify 25 pre-schoolers who would form the core sample.

5.6 THE QUESTIONNAIRE

This has been included as Appendix 1 of the thesis.

Twenty five pre-schoolers who had IQ scores of 130 and more (as measured through the filtering process), and whose parents were amenable, available and who lived in close proximity to the researcher formed part of the group to whom the

questionnaires were administered. Only three parents were substituted during this phase of the reseach design. The high rate of participation in the research process could be attributed to parents being "curious" about wanting to know about their children and a "sense of flattery for being selected for the interview" (Bulmer & Warwick 1998:247).

Oppenheim (1966:2), an authority on questionnaire design, argues that a

> "questionnaire is not just a list of questions or a form to be filled out. It is essentially a scientific instrument for measurement and for collection of particular kinds of data. Like all instruments it has to be specially designed according to particular specifications and with specific aims in mind."

Similarly, Vockell & Asher (1995:124) consider the questionnaire as "any data collecting instrument other than an achievement or ability test, where respondents directly supply their own answers to a set of questions."

The questionnaire essentially consisted of two sections, with each of the sections having many sub-sections.

Section A of the questionnaire consisted of biographical data relating to the child and the parent, while section B consisted of details relating specifically to the child's development and stimulation.

The administered questionnaire consisted of a combination of open-ended questions and structured closed-ended questions in order to elicit appropriate responses. Ary et al. (1990:419) confirm that it is appropriate to utilize this combination in a single questionnaire-interview format because closed questions secure factual information, while open-ended questions try to identify the subject's understanding of an issue

and motivations underlying the response.

5.6.1 Administration of the Questionnaire

The questionnaire was delivered to the parents of the select twenty five pre-schoolers. As the researcher had had previous contact with the parents and the pre-schoolers, he chose to use the self-administration format for the respondents. Ary et al.(1990:421) argue that the personal appearance, mood or conduct of the researcher which may influence the results of an interview are not present in the completed questionnaire, so these potential problems were avoided with the questionnaire being completed in the researcher's absence.

5.7 FEEDBACK SESSIONS

5.7.1 Preliminary Feedback

When the preliminary results became available the researcher together with available psychometrists, held a major feedback and debriefing session with the pre-school teachers who had participated in the project and parents who had completed the questionnaire. This was done with the following intentions:

1. to indicate to them the stage of the research project.
2. to assist parents with placing their children in enrichment programmes.
3. to follow up on queries that they may have had.
4. to provide a resource list where counselling and support for both the parents and their children could be obtained, and where enrichment materials for home use could be procured.

Twenty two parents and five pre-school teachers attended this session.

5.7.2 Final Feedback

On submission and approval of the thesis, final feedback will be given to the parents and their concerns will be once again addressed.

5.8 INTERVIEWS

Randomly selected parents of 3 male children and parents of 3 female children were subject to a non-structured, non-standardised interview to complete the final stage of the empirical design.

The questions were open-ended and flexible. This allowed the interviewer to probe and to go into more depth, if necessary. It also enabled the interviewees to answer questions within their own frame of reference (May 1997:112).

Cohen & Manion (1991:312) indicate that with an open-ended question structure, it is possible to clear up any misunderstandings which may arise. This format also encourages co-operation and helps establish rapport between the interviewer and the respondent. Similarly, open-ended questions also assist in dealing with unanticipated answers that may arise in the research situation.

5.8.1 Analysis of Interviews

The data of the interview was qualitatively analysed and integrated into the research report only to enhance the findings. Simon (1986:87) says that in any research situation it is important to retain some of the richness, colour, and intensity of the respondents' views, which are adequately catered for in qualitative analysis. He goes on to explain that "talk, gesture and intonation can all be noted and reproduced and the observation of displays on the walls of subjects' homes can sometimes say a lot more than a tick on a questionnaire" (Simon 1986:87). Excerpts of 5 interviews and 1 full length interview will be presented in chapter six which details the results.

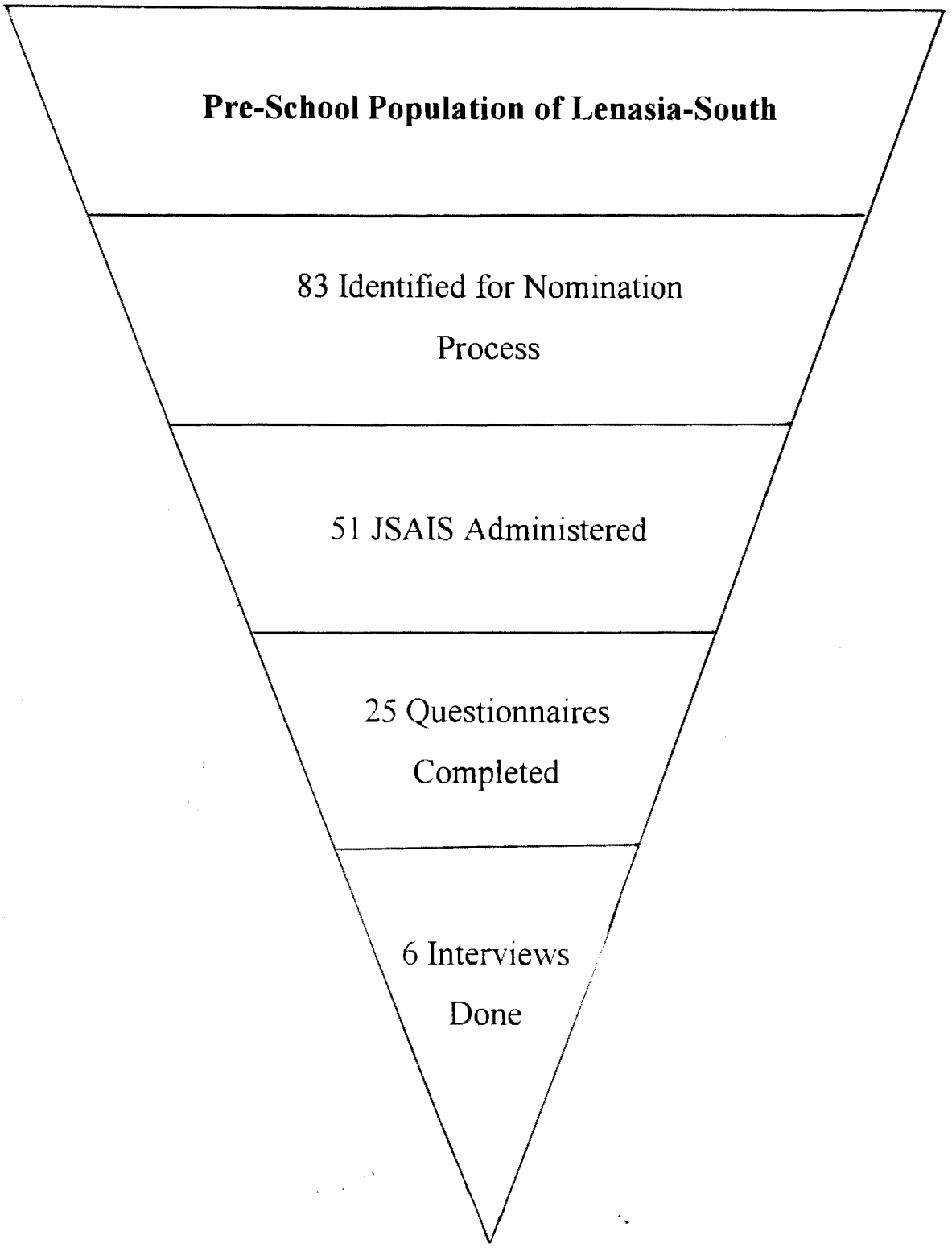
5.9 ANALYSIS OF RESULTS

The results of the questionnaire were analysed according to principles embodied in descriptive research, while descriptive statistical techniques embellished the qualitative data. Descriptive research "is concerned with the current status of things" and describes "existing achievements, attitudes, behaviours or other characteristics of a group of subjects" (McMillian & Schumacher 1993:266). Singleton et al. (1993:250) concur with McMillian and Schumacher by maintaining that descriptive research only seeks to describe characteristics within the population being studied, while Smith (1995:18) defines statistics as:

> "the science of the development and application of the most effective methods of collecting, classifying, analysing and interpreting quantitative data, so that the reliability of the findings can be determined by means of inductive reasoning based on mathematical methods of determining probability."

This study specifically included tables, graphs and measures of central tendency such as the mean, median and the mode.

The qualitative data were summarised into what Rubin & Rubin, (1995: 70) call "emerging themes" which reflect the diverse responses generated by the interviewees. These themes have been assembled into tables that encapsulate the essence of the varied qualitative responses. Where possible, qualitative responses have been quantified statistically and have been depicted accordingly.


Pre-School Population of Lenasia-South
83 Identified for Nomination Process
51 JSAIS Administered
25 Questionnaires Completed
6 Interviews Done

5.10 CONCLUSION

This chapter has detailed the entire research process embraced in this research project. The envisaged final feedback session to be undertaken on the completion of the research report has also been alluded to.

The following chapter will detail the results of the questionnaire that was administered to the 25 parents, as well as excerpts from 5 interviews and 1full length interview that was conducted with the 6 randomly selected parents.

CHAPTER SIX

ANALYSIS OF RESULTS

6. INTRODUCTION

Chapter five focussed on the research design and methodology that was implemented to investigate the Background of the Gifted Indian Pre-school Child. This chapter will focus on analysis of results of the questionnaire that was administered, as well as excerpts from transcripts of the interviews that were conducted with the parents will also be presented.

Discussions with the statistician and other social scientists who were privy to the questionnaire and the results indicate that one hundred and twenty one (121) possible variables accompany the twenty five (25) cases studied.

The above was used to evaluate the following main hypothesis:

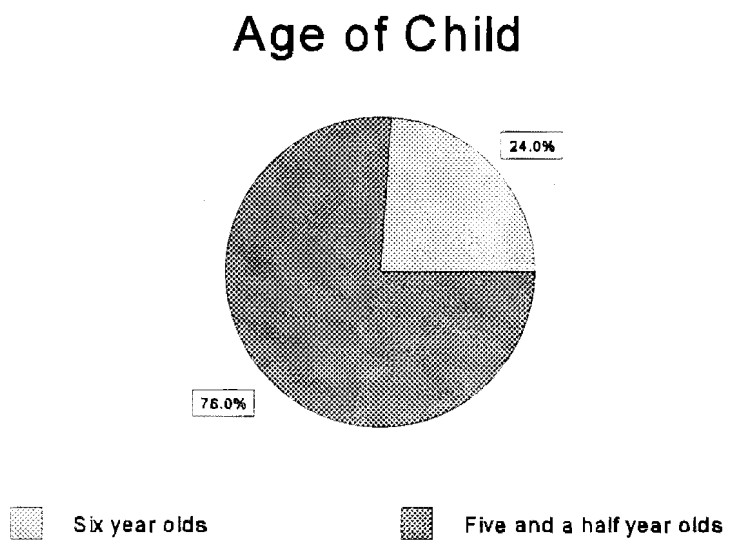
Intellectual development can be promoted in pre-school children. The main hypothesis was subdivided into the following sub- hypotheses:

- Parent and child biographies impact on intellectual development.
- Child development is a consideration for promoting giftedness.
- Stimulation (toys, play and technology) influence gifted pre-school children.
- Television and reading influence gifted pre-school children.
- Daycare and pre-schools sustain intellectual development.

6.1 BIOGRAPHICAL DETAILS OF CHILD

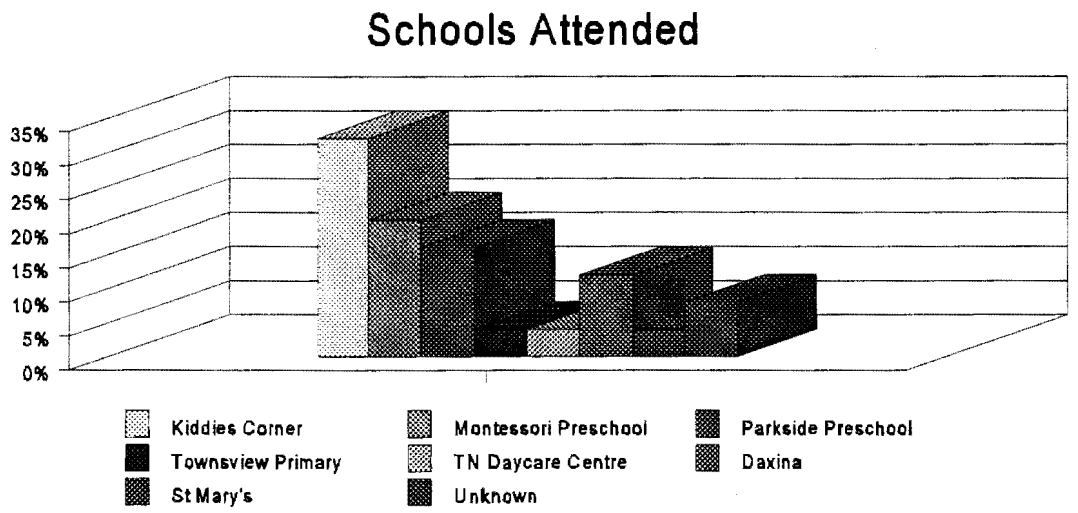
6.1.1 Age

Of the 25 questionnaires that were used in the analysis of the results 24% (6) of the parents indicated that their children were 5 ½ years old, whilst 76% (19) indicated their children were older than six, but younger than seven. Although the children were six years old or older than six but younger than seven, they were not at school because they were born after 30 June 1991 but before 30 June 1992.



6.1.2 Schools Attended

Of the children, thirty two percent (8) attended the Kiddies Corner Playschool. Twenty percent (2) attended the Lenasia South Montessori Preschool. Sixteen percent (4) attended the Parkside Preschool, 12% (3) attended Daxina, while 4% (1) attended Townsview Primary, St. Mary's Preschool, and T. N. Daycare Centre respectively. Eight percent (2) of the parents failed to provide this information on the questionnaire. Although it could be corroborated with other details that the researcher has on the children, he chose to indicate it as "missing information" because it was not included in the completed questionnaires.

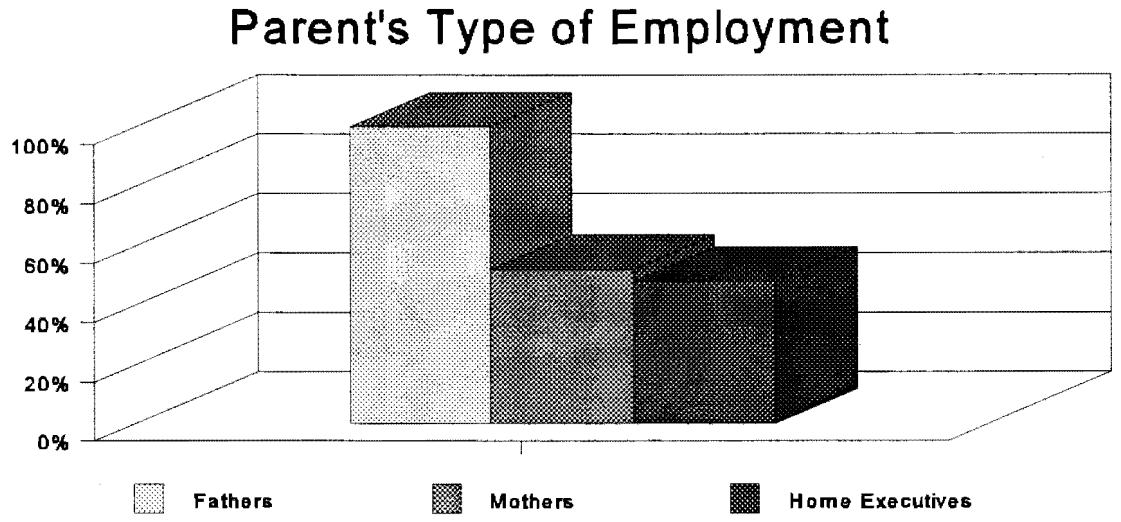


From the above it can be determined that pre-school attendance has been considered important for all of the parents.

6.2 BIOGRAPHICAL DETAILS OF PARENTS

6.2.1 Working Parents

All of the fathers , 100% (25) were employed, while 52% (13) of the mothers were employed, and the other 48% (12) were full-time home executives.



The aforementioned indicates that at least one the parents in the household are in full time employment.

6.2.2 Qualification and Occupation

Of the respondents, 12% (3) of them neglected to indicate the highest qualification the mother achieved, while 20% (5) of the respondents failed to indicate the father's qualification. Of the above there was only one instance where both parents did not include this information. Where the qualification for the mother was not included, the occupation for the mother was described as home executive.

In terms of the qualification the lowest indicated qualification achieved by any father was a Std 8 (N=1), whilst the other 19 fathers indicated that they achieved at least a matric. Of these, 44% (11) had at least a three year post-matric qualification.

The lowest qualification achieved by mothers was Std 8 (N=1) whilst matric as a

minimum qualification obtained by mothers seems to predominate (N=21). Twenty eight percent (7) of these mothers had at least a three year post-matric qualification obtained from either a technikon or university.

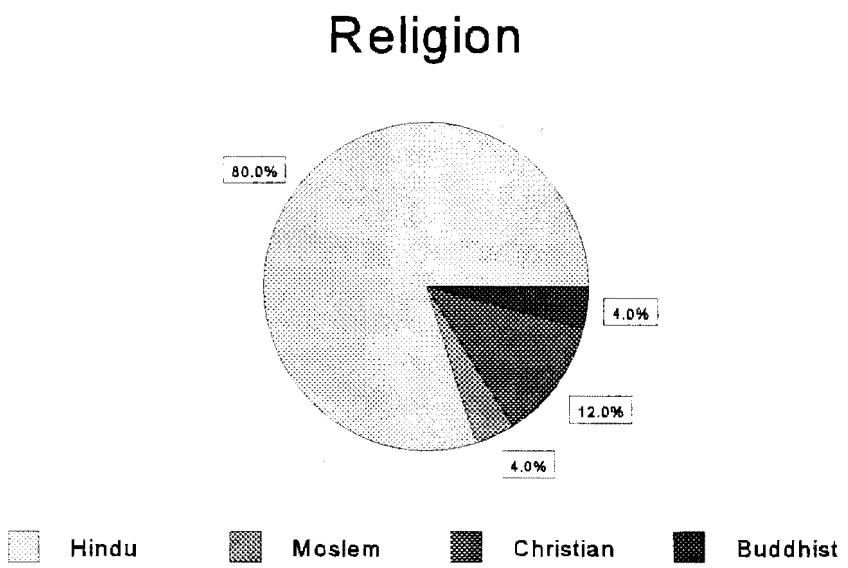
Although 44% (11) of the father's, and 28%(7) of the mother's had a tertiary qualification, the majority of both parents had matric as a minimum qualification.

6.2.3 Marital Status

All the couples that responded indicated that they were married.

6.2.4 Religion

Of the respondents, 80% (20) were Hindu of different linguistic backgrounds, 4% (1) were Moslem, and 12% (3) were Christian. One of the respondents indicated that they subscribe to no definite religion but emphasised that they had Buddhist tendencies.



It is interesting to note that all the children subscribe to a recognised world religion.

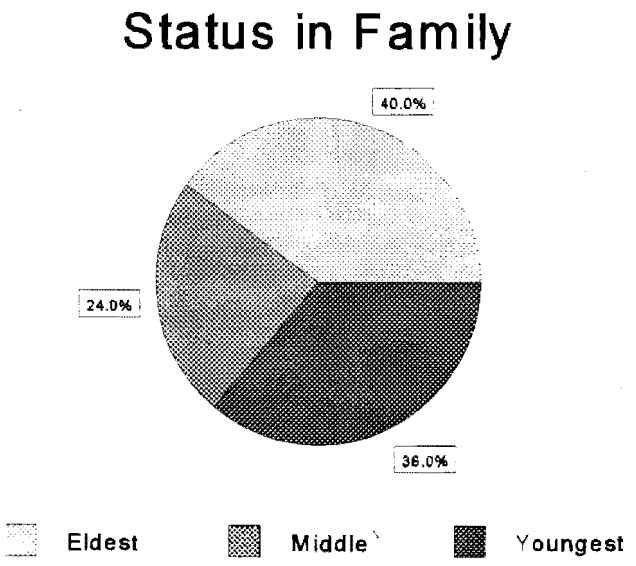
6.2.5 Number of Children in Family

The average number of boys in each household was 1.6 and girls, 1.4. The combined average number of children was 2.36 with three of the parents indicating that the children who were part of the research programme were their only children.

All twenty five households included in this research programme consisted of families ranging from 1 child to a maximum of 3 children.

6.2.6 Status in Family

Of the research cohort, 40% (10) were described by their parents as being the eldest (or only child), whilst 24% (6) were considered as part of the middle of the family, and 36% (9) were regarded as the youngest in the family.



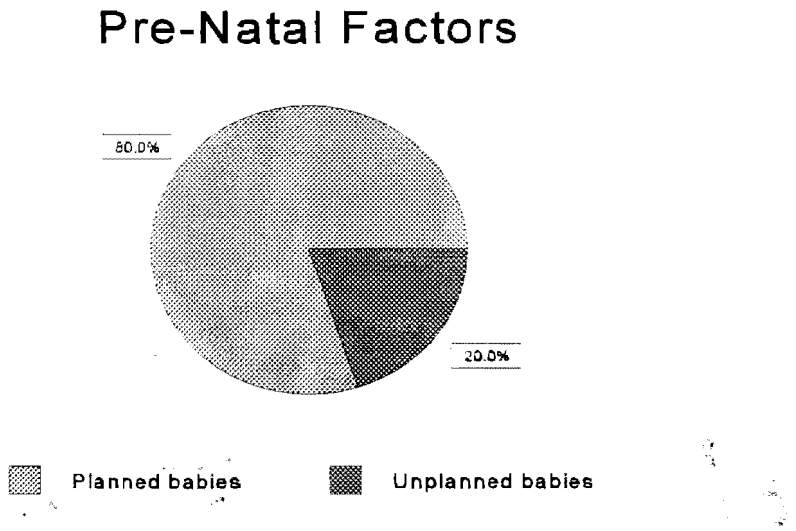
6.3 PRE-NATAL FACTORS

6.3.1 Parental Attitudes Towards Unborn Children

Of the children, 96% (24) were described as the parents' own, whilst one child (4%), was similarly described even though his father died and his mother remarried.

Eighty percent (20) of the children were planned and 5 (20%) were unplanned children.

Of the mothers 32% (8) indicated that they had engaged in doing things that they considered "special" prior to the birth of the child. Responses included considering the child being special from conception. Some mothers abstained from alcohol and included taking vitamin and calcium supplements in their diet.



Twenty four percent (6) of the mothers considered verbal stimulation of the foetus to be important. They either spoke to the "unborn baby" or played music. The parents that played music indicated that the music had a calming effect on the mother and the foetus. Music that was chosen ranged from Indian to classical and contemporary pop. One particular respondent diarised all special events in the child's life such as date of conception, first kick, and visits to the gynaecologist.

Irrespective whether the babies were planned or not, majority of the parents especially the mothers did "special things" to welcome the babies into the world.

6.4 PREGNANCY

Eighty-Four percent (21) of the mothers reported that they had normal pregnancies. Twelve percent (3) did not respond, while only one mother reported that she had problems with her pregnancy. This was related to a threatened miscarriage that was caused by the umbilical cord twisting around the neck of the foetus. This resulted in the child being born approximately four weeks pre-term.

None of the mothers were subjected to any X-rays during their pregnancy, however, one mother was subjected to a sonar scan as part of her routine physical examination.

6.4.1 Medication

Twenty four percent (6) of the mothers used iron tables during the pregnancy. One person (4%) used multivitamins, while 16% (4) used multivitamins and iron tablets. One mother (4%) was treated for high blood pressure and was not sure about the name of the medication that she took.

From the above it can be ascertained that almost 50% of the mothers took some form of vitamin supplementation during their pregnancy

6.4.2 Diet

None of the mothers were placed on any special diet by their doctors or gynaecologists for the duration of the pregnancy, however, one mother (4%) chose to adopt a vegetarian diet of her own accord.

6.5 BIRTH HISTORY

Ninety two percent of the mothers (23) had natural births. Of these, 20% (5) of the mothers indicated that special procedures were used in the birth process. Eight percent (2) of them had undergone epidurals, 2 (8%) had forceps used in the delivery, while 1 (4%) had the vacuum suction used. Only 8% (2) of the mothers had caesarian section births.

6.5.1 Baby's Constitution after Birth

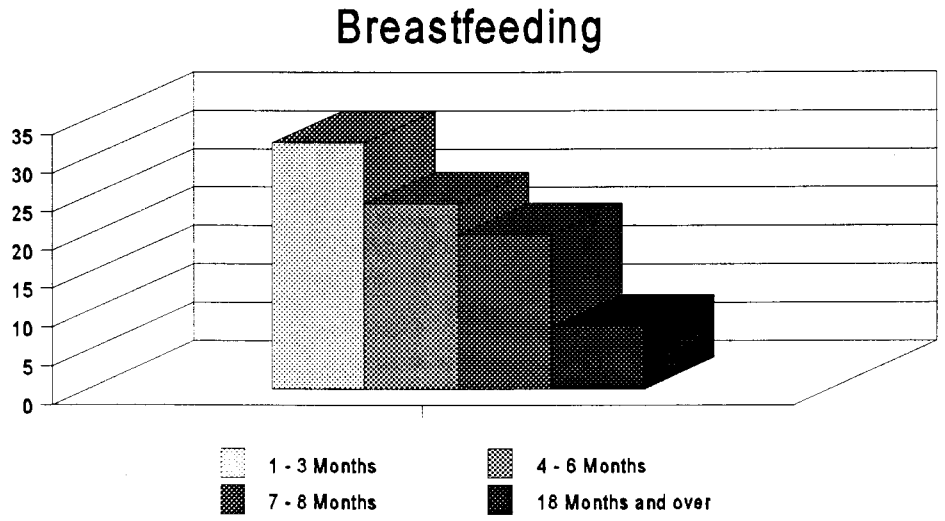
Ninety two percent (23) of the mothers reported that their children were healthy immediately after birth. The mother of the pre-term child indicated that the child's nasal and throat passages were blocked when the child was born. Another indicated that the child was born healthy but developed jaundice and cholic later.

It was reported that 92% (23) of the children cried immediately after birth. Two (8%) of the children were described by their mothers to have been "quite children".

Eight percent (2) of the children were described by their parents being "yellow" babies, while 20% (5) were described as "blue babies".

Twelve percent (3) of the babies experienced difficulties with sucking and swallowing. Eighty four percent (21) of the babies were breastfed while 4 (16%) were bottle fed

Of the breastfed babies, 32% (8) were breastfed for between 1 and 3 months; 24% (6) were breastfed for between 4 and 6 months; 20 % (5) were breastfed for between 7 and 8 months; while only 8% (2) were breastfed for more than 18 months.



The above indicates that mothers preferred breastfeeding to bottle feeding.

6.5.2 Abnormalities as described by the mothers

Of the children, 22% (8) were not born with any innate abnormalities. Of the mothers, 12% (3) classified the problems experienced by the children at birth as abnormal. One mother said that her child was born with excess tissue over his left eye, while another said that the child had his "right foot bent inward and it stuck to his chin". The third mother classified her child as being born with the umbilical cord around his neck as an abnormality.

6.5.3 Allergies

In terms of allergies experienced by the children in their development, 8 % (2) of the children experienced food allergies, with one child (4%) not being able to consume any sugar, dairy or wheat products. As a consequence the parents had to devise a special diet for the child to follow.

Eight percent (2) of the children experienced hayfever symptoms which were described by the parents as asthma, in different conditions. One child (4%) also displayed an allergic reaction to a particular brand of baby products.

6.6 ATTENTION TO THE YOUNG CHILD

Only 4% (1) of the parents indicated that their child spent many long hours awake in the cot, while the other 96 % (24) refuted this in relation to their children.

All the respondents indicated that either the parents, or members of the family responded to the child immediately, or very soon after the baby cried.

Seventy six percent (19) of the parents indicated that they, or members of their family, carried the infant around. Of the 6 parents who indicated that they did not carry the child around very much as a baby, 12% (3) said they only did so when they thought that the child was in distress or in discomfort.

All the children were taken out with the family to the following places:

- to relatives
- on holidays to different cities
- picnic
- zoo

- beach
- parks
- merry-go-round
- Gold Reef City
- aquarium
- movies
- lunches
- shopping
- Warmbaths
- walks
- Rand Show
- weddings
- restaurants

All the parents said that they made their children aware of the surroundings in some way. In doing so, 96% (24) said that the children asked many questions . These questions related to nature and had many philosophical underpinnings. Some of the questions asked are detailed below:

Where do people come from?

Why are the clouds blue?

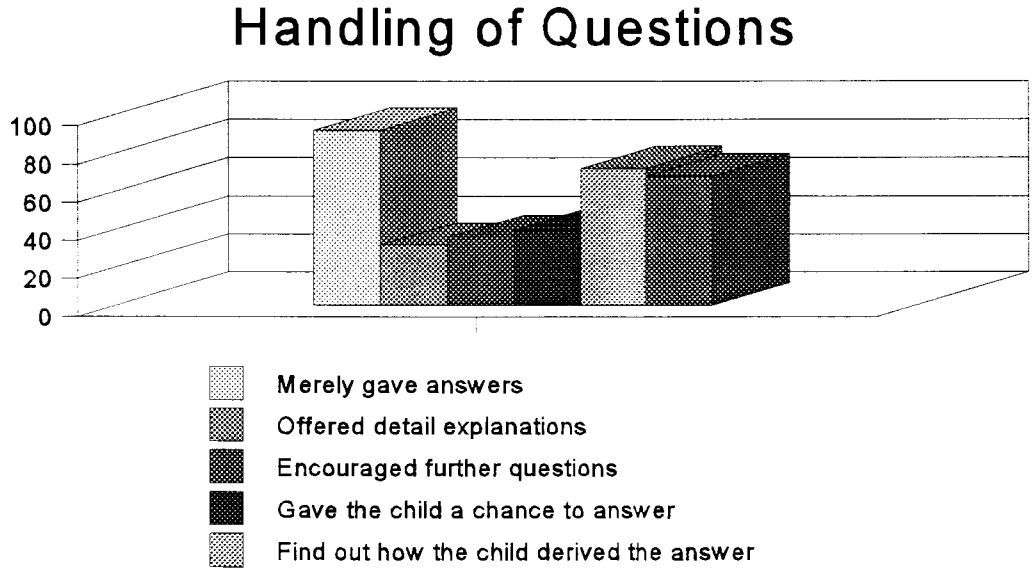
Why am I different from others?

How and why do things happen?

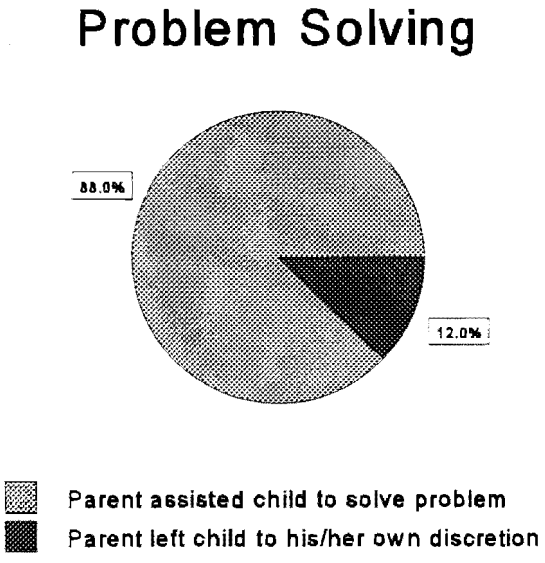
Other questions depended upon different situations which the child and parents were placed in together. However, all the parents indicated that the questions that the children asked were related to them being curious, and in most instances these questions asked how, why, when, what, who, and where.

Parents' responses to handling their children's questions have been classified in the following in the following manner:

Merely gave answers:	92 %	(23)
Offered detailed explanation:	32%	(8)
Encouraged further questions:	36%	(9)
Gave the child a chance to answer:	40%	(10)
Found out how the child derived the answer:	72%	(18)
Encouraged the child to think of alternatives:	68%	(7)



When children were faced with the proposition of solving problems, 88% (22) of the parents indicated that they assisted their child by offering him/her assistance in planning, monitoring and evaluating the outcome of the solution, while 12% (3) suggested that they left it to the child's discretion to determine a solution for themselves.



It would seem that only a small percentage (12%) of the parents gave their children autonomy in terms of determining solutions to problems, while the majority of the parents (88%) imposed their logic upon the children.

6.6.1 Play

Parents initiated play activities 44% of the time. However, in many instances the parents also accompanied the children in the activities as well. They encouraged the children to participate in the activities that they initiated by setting up the toys and playing with the children.

One of the parents said that he tried to encourage independent play in the child, by observing the child from outside the game situation, whilst 16 % (4) of the parents saw their roles not only as initiators of play, but also as companions and mentors of the child in the play activities.

Only 44% (11) of the parents used a carry chair to play with the child. It seems that it was used at a conscious level to encourage the children to become aware of their

surroundings. At times, it was used by busy parents to keep the children quiet when they did not want to be disturbed. It was also used to restrict the child's movement and to provide the child with safety and an opportunity to explore the world around him.

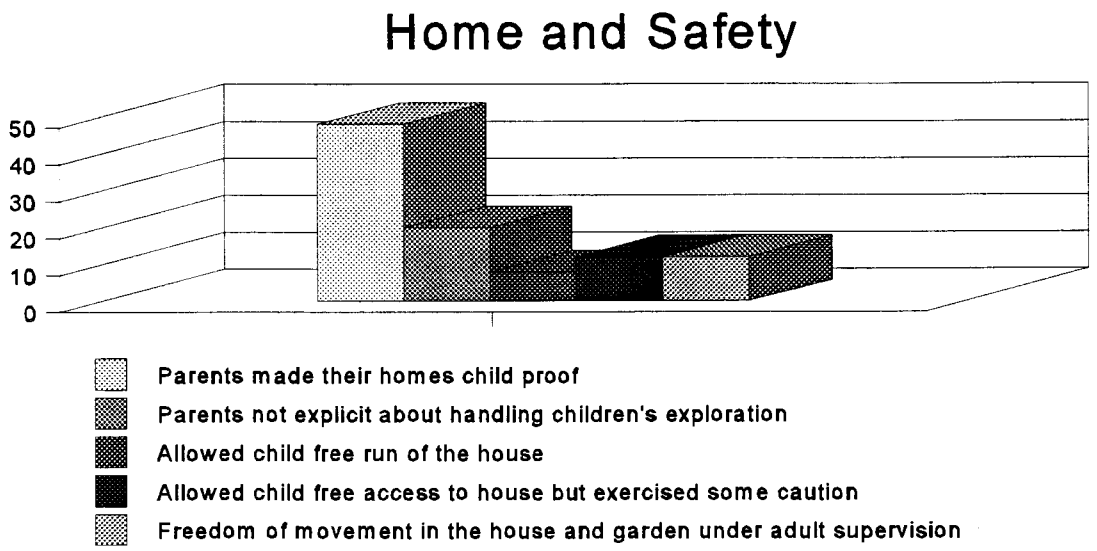
6.6.2 Handling Exploration

Of the parents, 48% (12) explicitly said that they made their homes child-proof. This entailed removing dangerous objects from within reach of the child and, in other instances, cupboards were locked and sharp objects and poisons were made inaccessible to the child. They emphasised that they tried making the house child-proof, so that the children could be allowed free access of the house for exploration.

Twenty percent of the parents (5) who were not explicit about handling their children's exploration safely, hinted at making the house safe by watching the child's movements, restricting exploration in the kitchen during cooking, covering electrical sockets with dummy plugs, rearranging the house, and packing cupboards in a safe manner.

Of the respondents 8% (2) did not consider house access and injury to be an issue, as they thought that they would be inculcating a degree of responsibility, by allowing the child a "free run of the house".

Twelve percent (3) of those who completed the questionnaire said that the child had "free access of the house but they exercised some caution", while another 12% (3) indicated that all their children had freedom of movement in the house and in the garden only, but "under adult supervision".



From the above it can be concluded that the majority of parents considered home safety to be important. Therefore, they choose to make their homes child-proof or allow their children freedom of movement in the house and garden under adult supervision.

6.6.3 Opportunities for Cultural and Intellectual Stimulation

All the respondents were candid that they made opportunities available for their children's cultural and intellectual stimulation. Many of the Activities overlap with religious matters, however the topic as seen from a moral and religious perspective will be discussed in section 6.11.

The parents considered the following to be important for the cultural stimulation of their children:

- going to temple, church or mosque
- taking part in religious and cultural activities

- attending cultural and religious functions in the community
- going to Sunday school
- dressing in traditional Indian attire
- participating in Indian song and dance rituals
- going to family gatherings and weddings
- watching Eastnet
- watching Indian movies
- watching and taking part in Eisteddfods
- allowing them to participate in prayers

It seems that parents perceive a close relationship between cultural development and intellectual stimulation, as is borne out by the following activities, which were included as parent-driven exercises that could possibly stimulate the child's intellect as well:

- buying books and reading to the child
- taking part in karate
- taking the child to:
  - the zoo
  - the planetarium
  - youth theatre
- buying educational toys and games
- playing with the child
- participating in speech and drama

6.7 PARENTS

All the interviewees demonstrated that the roles both parents played were entirely dependent upon the situations that they were engaged in. In instances where the

mother was a full-time home executive, most of the responsibilities related to child-rearing were left to her. However, when both parents worked they shared the responsibilities.

When the responsibilities were shared, 32% (8) of the mothers still took on the role of nurturing the child, while 12% (3) of the parents left discipline to the father to implement. The other 8% (2) of the respondents were ambiguous about their specific roles.

6.7.1 Discipline

Sixty four percent (16) of the interviewees were frank that both parents were responsible for the maintenance of discipline at home, while 12% (3) of the mothers and 16% (4) of the fathers were custodians of discipline at home. In 8% (2) of the cases, grandparents were delegated this responsibility, only because both parents were in full-time employment.

The above demonstrates that discipline is the responsibility of all members of the family who have a custodial relationship with the child.

6.7.2 Extended Family

Eighty percent (20) of the parents surveyed said that the extended family assisted them in bringing up their children, while 20% (5) of the parents said that the extended family did not play a major role in the bringing up of their children, only because they did not have members of their extended family close by to assist them.

Of the respondents 60% (15) saw the main function of the extended family, which consisted of grandparents and maternal and paternal aunts and uncles as assisting with the "rearing and education" of the child. Thirty two percent (8) said that the

extended family "provided a secure and safe environment" for the child, while 53% (13) thought the extended family reinforced discipline as it simultaneously provided children with religious and cultural information.

The extended family also provided support for the parents while they were away at work, or in emergencies when they needed someone to look after the child. Forty 44% (11) of the respondents indicated that the extended family also introduced a fun dimension into the lives of the children, with members of the extended family, especially the grandparents, who " played games, read, gave them a bath, bought clothes and toys, and often kept them during the holidays".

These respondents also alluded to members of the extended family "spoiling their children, yet providing them with good role models and attention when they neglected to do so themselves.

The above depicts that families that had access to their extended family network found them very useful in "rearing and educating" their children.

6.7.3 Coping with Racist and Sexist Behaviour

Ninety two percent (22) of the parents responded to this question. Thirty two percent of the parent (8) in their explanation on how they taught their children to cope with sexist and racist behaviour, admitted that it was difficult, but they tried to inculcate non-sexist and non-racist behaviour.

Of the parents 92% (23) placed their children in non- racial schools so that these behaviours could be inspired in their daily living. Sixty four percent(16) said that they tried not to practice racism or sexism in their home, while 28% (7) did not think racism or sexism were issues in their lives.

Sixteen percent (4) of the respondents said that they did not "encourage these forms of behaviour" and 8% (2) of the respondents said that they dispensed severe punishment for this type of behaviour. Twenty eight percent (7) of the respondents explained to children that they were not different and that "all children need to be treated the same".

One respondents (4%) said her children are "allowed to communicate, play, and stay with other race groups", while another remarked that "all our boys have White God-parents and they have been taught to mix and attend mixed schools".

From the above it can be concluded that the parents consciously demonstrated their intent to rid their children of sexist and racist behaviours by actively engaging them in activities where this impact will be maximised.

6.8 SPEECH AND LANGUAGE DEVELOPMENT

Fifty six percent (14) respondents expressed the opinion that their children "babbled a lot as babies", while 40% (10) did not consider the child's babbling to be "too much", and one respondent ignored this question.

Sixteen percent (4) of the parents displayed "excitement" when their children babbled and 28 (7) encouraged the babbling by talking "normally" with their children. Only one (1) respondent spoke back to the child in "baby talk", another thought that her child's babbling was "normal", whilst only one mother was very "surprised because her daughter talked at an early age".

6.8.1 Parent Talk

All, 100% (25) of the respondents indicated that they spoke to their children often, with much of their talk focussed on "describing and explaining things", as well as "singing and reciting nursery rhymes". Thirty two percent (8) said they always spoke "kind" and "encouraging" words to their children. Another 32% (8) of the parents said that they encouraged conversation with their children about television, animals, school, and friends, while 16% (4) included their children in their "normal everyday communication".

6.8.2 Vocabulary Expansion

Forty eight percent (12) of the parents evidenced that they deliberately used reading and story telling to expand the vocabulary of their children, while 20% (5) of the parents thought that television played a pivotal role in the expansion of their children's vocabulary. Four respondents stated their "excessive speaking" to the children in "an appropriate manner" assisted their children to expand their vocabulary. Sixteen percent (4) of the parents "played games", used "wall charts", "explained new words" or "taught proper pronunciation" to their children to achieve the same objectives.

Initially, babbling characterised the children's language development. This later changed to formal talk as parents consciously focussed on expanding the vocabulary of their children by engaging them in formal conversation.

6.9 MOTOR DEVELOPMENT

The following averages for the different activities have been computed:

Rolling over without support	4 months
Sitting with support	5 months
Crawling	7 months
Standing unaided	9 months
Walking	10.5 months

All the respondents answered to the question on the child's bodily development. Only 8% (2) thought that their children's physical development could initially be described as slow because of illness, however, after a year their development patterns could compare adequately with other children their age. The other 92% (23) of the respondents responded positively to their children's development, saying that it was either "good", that the child was "above average in terms of weight and height", "slightly advanced" or "larger than most children their age and have very good motor skills".

The motor development of the children involved in the research programme could be considered to be slightly advanced in comparison with their peers.

6.10 SOCIAL DEVELOPMENT

All 100% (25) children of the sample were described by their parents as being sociable. However, 23 (92%) were considered by their parents to have many friends.

Sixty eight percent (17) of the respondents said that their children had friends who come from different racial backgrounds and 100% (25) said that their children interact with children of different religions. All the parents (100%) said that they

applaud and encourage this kind of interaction. However, only 88% (22) of the children are allowed to visit friends or have friends visit them.

The parents indicated that when their children interacted with other children much of their time was spent in "playing and talking". Some of the other activities that the children engage in when together are " watching television, going to the movies, colouring, drawing, 'playing computer and TV- games', having parties, fighting and playing sport".

Although the nature of socialisation and the activities that the children engaged in differed, they ultimately contributed to the social development of the children.

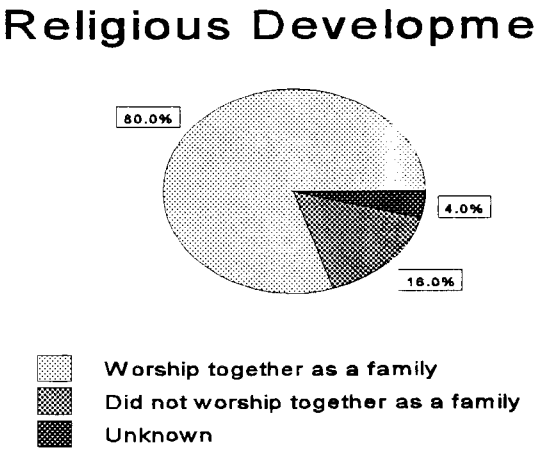
6.11 MORAL AND RELIGIOUS DEVELOPMENT

Only 20 (80%) sets of parents indicated that they worship together as a family; (16%) 4 said "no" and "1 chose to ignore the question".

Eighty-eight percent (22) of the respondents said that religion definitely influenced the way they brought up their children. Of these 22 respondents, 18% (4) were emphatic that religion "reinforced cultural and moral values and traditions" in their households, 9% (2) said that it had "no particular influence", while 1 (4.5%) "was not sure" about the influence religion had in the bringing up of his child.

These 22 parents elaborated that religion and scriptures have been used to teach "morals and ethics" to children. Religion also taught children to be "better people in life and good and kind to others". Stories from the scriptures and parables were used by parents to highlight "honesty, kindness, compassion, and love".

At a practical level, children visited the temple, mosque and church. They were taught to pray and participate in cultural and religious activities by singing and



playing instruments.

From the above it can be concluded that religion played an important role in bringing families together for prayer, while simultaneously reinforcing moral and cultural values.

6.11.1 Existence of God

Eighty four percent (21) of the interviewees admitted that their children asked either enquiring or intriguing questions about the existence of God, which the parents said they found difficult to answer. They admitted that they tried to be "logical and convincing", and explained the existence of God from their "own perception, and knowledge of God". Some of the responses that the parents offered were:

- "There is only one God, who is everywhere and is prayed to by people in different forms".
- "God is a powerful being that can't be seen but is everywhere".
- "God is in Heaven".
- "God existed by looking at the trees, life and at everybody".
- "God loves children that are respectful to elders, and God loves everyone".

6.11.2 Behaviour and Reprimand

All parents developed mechanisms for disciplining and reprimanding their children should they steal or lie. Thirty six percent (9) of the parents chose to explain to their children "that such behaviour was unacceptable and that it should not take place again". Twenty percent (5) of the parents resorted to "corporal punishment" or "discipline with controlled hiding".

Twenty eight percent (7) of the parents chose to "ground" the children by denying them their favourite toy or television programme, while 8% (2) of the parents personalised their children's behaviours and felt "disgust and disappointment". One mother said she related the story of Pinnochio in disciplining her son, while another threatened to "burn his mouth with a chilli" should he lie again and, should he steal, she would "chop off his hands".

Despite the above, when parents were asked to describe their children's behaviour in relation to other children their age, 44% (11) of the parents depicted their children's behaviour as "normal", 8% (2) thought their children's behaviour was "good" whilst another described her daughter's behaviour as "excellent". Thirty two percent (8) of the parents described their children as being "above average", "responsible", and "well behaved". One (4%) of the parents described her son as being "quick on the uptake, very observant, and enthusiastic", another said her son

was "hyperactive and inquisitive, otherwise well-behaved", whilst another considered his son to be "slightly more reserved and polite".

6.12 INTEREST IN TOYS AND PLAY ACTIVITIES

The analysis of results reveals that parents have categorised the preference of the children's toys into two distinct categories, viz. gender-appropriate toys and gender-neutral toys. Girls showed a preference for playing with dolls, tea-sets, cooking utensils, "bright things", and make-up, while boys favoured cars, marbles, tops, construction toys, and remote and battery operated trucks and trains.

The gender neutral toys that children preferred were: dinosaurs, "Lego", puzzles, colouring books, bicycles, TV games, computer games, crayons, and pencils.

The following table depicts the toys parents bought for their children and some of the reasons they offered for having made the purchase:

TOY	REASON
Car	Showed interest in cars. Child wanted it. Child liked colour, movement and noise. Education and pleasure Makes noise and lights up Eye co-ordination and control "Boys greatest love"
Play Station	To encourage children to differentiate between shapes and sizes

TOY	REASON
Building Blocks	To stimulate eye-hand-co-ordination. To stimulate the mind Easy to manipulate. To learn about colours. To build things. To learn motor skills.
Colouring Books	To stimulate co-ordination. Play acting. To observe colours and shapes. To develop a hold on the crayons.
Activity Board	To stimulate and improve co-ordination.
Tea Sets	Child liked it. To play house. Asked for it.
Teddy Bears / Fluffy Toys	To feel safe and to cuddle something. They were cute. Child loved the feel.
Shapes	Easy to manipulate. To identify shapes and colours. To classify and categorise.
Puzzles	Develop logical skills. Education and pleasure. Children enjoyed playing with them. To develop motor skills. Shows interest in colours, books and puzzles. Loves doing puzzles.

TOY	REASON
Rattles	Colourful and sounds nice.
Balls	To develop co-ordination. To play sport.
Tricycle / Bicycle	Experience a sense of adventure. Develop muscles. To enjoy riding. To ride and exercise. To learn to balance. Other children had it.
Books	To read stories. Child likes the pictures. Enjoys playing with books. To intellectually stimulate the child. Child loved being read to.
TV Games	To promote co-ordination. Nice games. Pictures move, sounds, singing.
Electronic Toys	Liked them ourselves. To stimulate co ordination To have family fun.
Musical Instruments	To play instruments. To develop interest in music. To sing nursery rhymes.
Paints / Crayons	To draw. To paint faces. To complete colouring books.

TOY	REASON
Dolls House	To play "house - house".
Blackboard	To teach child to write and draw. For play acting as a teacher. To learn. To help child through school.
Activity Games	Fun for the whole family.
Whiz-kid	To learn. To develop skills for child to be successful at school.
Roller Blades	To learn to balance and start riding without supervision.
Dinosaurs	Playing or acting.

6.12.1 Choosing of Toys

It would seem that choosing toys is a major family event, for all members of the family are generally involved. The child is often given the opportunity to choose what he likes, but frequently the father, mother and siblings make their suggestions as to what toys should be purchased. Grandparents also play a major role in purchasing toys that the child likes.

6.12.2 Homemade Toys

Forty four percent (11) of the parent respondents indicated that they made toys for their children at home, 42% (13) declared that they did not make any toys for their children, while 1 (4%) parent chose not to respond.

The following are some of the toys that the parents made at home:

- hand puppets, rag dolls, teddy bears and bean bags,
- paper toys such as jets, planes, windmills, kites, and mobiles,

- toys from paper maché,
- dolls' houses,
- articles from playdough.

6.12.3 Handling of Toys

Forty eight percent (12) of the parents said that their children were "very careful" with their toys and treated the toys with "full attention and affection". Twenty percent (5) confirmed that their children were "destructive" with the toys and left them "scattered around". Twelve percent (3) indicated that their children treated the toys with "curiosity", and often "took them apart because they wanted to put it together again". A further, 12% (3) confirmed that their children "cared and shared their toys with other children", while 8% (2) of the parents maintained that although their children "handled their toys roughly", they always packed the toys away neatly.

6.13 TECHNOLOGY

The following table indicates some of the more popular electronic and technological pieces of equipment that are found in a home, and whether the children were given an opportunity to use them.

ITEM	FOUND IN HOME		USE	
	YES	NO	YES	NO
Radio	25 (100%)		24 (96%)	1(4%)
Television	25 (100%)		24 (96%)	1(4%)
Video Recorder	24 (96%)	1(4%)	23 (92%)	1(4%)
Microwave oven	24 (96%)	1(4%)	17 (68%)	7 (28%)
Camera	24 (96%)	1(4%)	15 (60%)	9 (36%)

ITEM	FOUND IN HOME		USE	
	YES	NO	YES	NO
Video Camera	12(48%)	13(52%)	3 (12%)	22 (88%)
Telephone	25 (100%)		25 (100%)	
Computer	18(72%)	7(28%)	18 (72%)	7 (28%)
TV Games	18(72%)	7(28%)	20 (80%)	5(20%)

All the children used the cheaper and less sophisticated electric and electronic equipment, while the more sophisticated and expensive were reserved for the cognitively astute children.

6.14 RECREATION

The following table presents some of the recreational activities that parents and children may have engaged in together:

	RECREATION ACTIVITY	YES	NO
1.	Gone to the Movies	25 (100%)	
2.	Visited the Zoo	25 (100%)	
3.	Gone on a Picnic	24 (96%)	1 (4%)
4.	Visited the Library	18 (72%)	7 (28%)
5.	Visited the Museum	8(32%)	17(68%)
6.	Gone on Holiday	25(100%)	
7.	Had a Birthday Party	25 (100%)	
8.	Visited the Fun Fair	25 (100%)	

	RECREATION ACTIVITY	YES	NO
9.	Gone to a Farm	19 (76%)	6 (24%)
10.	Visited the Beach	25 (100%)	
11.	Visited a Factory	12 (48%)	13 (52%)
12.	Visited Parents' Place of Work	23 (92%0	2 (8%)

The foregoing list of recreational activities that the children engaged in with their parents possibly depicts the parents' interests as well as the probable fascination that they hoped to conjure in their children. It also indicates the accessibility of the recreational activities and the implicit financial implications thereof.

6.15 COMPUTERS

Eighteen (72%) of the parents have computers at home. All of these parents have given their children the opportunity to use the computers.

Most of the computers have come with "pre-loaded bundled packages" which basically consist of word processing packages, educational programmes, interactive games and spread sheet programmes.

The activities that the children engage in with the computer are dependent upon the loaded programmes and the knowledge their parents and siblings have about computers. The main activity for all 18 children who have computers is the playing of educational and recreational games. Thirty two percent (8) of the children use the computer to learn about animals, spelling, and drawing. Eight percent(2) used the computer to type their names, addresses and telephone numbers. One (4%) parent indicated that, besides the activities described above she encourages her child to copy words from books onto the computer.

Despite the fact that none of the children went to computer enrichment centres, 52% (13) of the parents are of the opinion that working on computers have made their children "fearless" about computers, while 48% (12) indicated that computers have "improved their children's spelling".

The children who have computers or were exposed to computers used them for a variety of recreational and educationally stimulating activities. However, these activities were confined to the programmes that were loaded, as well as the computer knowledge of parents and siblings.

6.16 ELECTRONIC GAMES

In interviews with 24% (6) of the parents, they indicated that they bought electronic games for their children on the assumption that these games would stimulate their children intellectually. They were of the opinion that if their children could master the computer and electronic games they would be able to "make their children brighter".

The following table depicts the electronic games that were purchased by the parents:

	ELECTRONIC GAMES AND TOYS
1.	TV games
2.	Walkman
3.	Hand held games
4.	Calculators

5.	Children's' Laptop computers
6.	Remote controlled cars
7.	Whizz kid 2000
8.	V - Tech junior
9.	Electronic keyboard
10.	Smart start
11.	Electronic Musical Instruments
12.	Tamagotchi
13.	"WalkieTalkies"
14.	Play Station
15.	Sega Games
16.	Electronic Robots
17.	Gameboy

The variety of electronic games and toys depicted above highlight the point that parents are convinced that children who are perceived to be "bright or "gifted" need to "computer and electronically-literate" for them to succeed in the future.

6.17 CREATIVE PLAY

Ninety two percent (23) of the parents affirmed that their children have shown interest in certain special activities which they have nurtured. The following table depicts the interest areas of the twenty three children as described by the parents, and the manner in which the parents believed that they stimulated and sustained each child's interest in that activity as described by the parents.

	ACTIVITY	DEVELOPMENT OF INTEREST
1.	Art Drama	Encouraged to draw Attends Speech and Drama classes Encouraged to watch television
2.	Colouring with blow pens.	Work is put up on the wall
3.	Drama Computers	Attends Speech and Drama lessons. Uses her cousin's computer.
4.	Music and singing	Participates in the Temple bhajan group
5.	Painting Colouring Computers	Goes for art lessons Bought colouring books Purchased a computer and software
6.	Drama Dancing Art	Attends Speech and Drama classes. Takes part in stage shows. We colour and draw with her.
7.	Dance Drama	Encouraged her to dance at home. Takes part in shows and goes for lessons.
8.	Dancing Drawing	Given her the opportunity to take part in cultural activities. Bought paints and crayons.
9.	Singing Dancing	Bought her a mike and encouraged to sing in the temple. Dances in shows.
10.	Art Michael Jackson's Dances	Encouraged to draw. Bought him Michael Jackson's videos.

	ACTIVITY	DEVELOPMENT OF INTEREST
11.	Art	Bought him the necessary things.
12.	Speech and Drama Dance	Offered praise and encouragement.
13.	Dance Painting and Drawing	Learns dance from mother. Bought art materials for her
14.	Karate	Sent for karate classes
15.	Dance Drama and Concerts	Sent for lessons. Helped with Rehearsals
16.	Dance	Goes for lessons. Taught by mother who is an Indian classical dancer.
17.	Dance Plays	Encouraged. Help with costumes and rehearsals.
18.	Drawing Dance Computers	Bought the necessary items for art. Sent for Dance lessons. Purchased computer for child.
19.	Dancing Singing and Imitating people	Encouraged. Allowed to perform in front of people.
20.	Cricket	Plays with dad. Sent for coaching.
21.	Dancing Drawing	Sent her for ballet lessons. Attends an art academy to learn drawing.
22.	Drawing Dance Making of cards	Helped child to identify shapes, sizes, and print material. Help child make the cards on the computer.
23.	Drawing Drama	Bought art materials. Visit children and youth theatres.

Only 68% (14) of the respondents indicated that they exposed children to other art forms, (other than those that they were engaged in) that they thought their children

would be interested in. This they indicated was sometimes done at the insistence of their children.

6.17.1 Hobbies

All 100% (25) of the respondents said that they did not formally initiate or promote the development of hobbies in their children. Fifty two percent (13) considered their children to be too young to develop a hobby.

The above indicates that this is an area that all parents have neglected to develop.

6.17.2 Careers

Thirty six percent (9) of the parents declared that they explored possible career choices with their children at an informal level. Fifty six percent (14) indicated that this was not done at all, while 8% percent (2) of the respondents ignored this question.

The following table explores the possible career choices of children and the reasons that parents advocated for their exploration.

	CAREER	EXPLORATORY REASONS
1.	Dancer	Child enjoys it
2.	Doctor	Makes people better Enjoys playing doctor Shows a keen interest in people Visits the doctor Father is a doctor.
3.	Policeman	Visited the police station. Very responsible job.
4.	Fireman	Visited the fire station It is a very important job.
5.	Accountant	Aunt is an accountant.
6.	"Computers"	Father is in the profession.
7.	Teacher	Mother is in the profession. Mother's influence Loves teaching children.
8.	Artist	Has a flair for painting. Likes drawing and painting.
9.	Lawyer	Lawyer relatives. Child speaks clearly and fights for her rights.
10.	Astronaut	Intrigue.
11.	Palaeontologist	Obsession with dinosaurs.

6.18 READING

All, 100% (25) of the parents confirmed that they often paged through a variety of reading material with their children. They also maintain that they explored not only the written material but discussed the pictures and photographs in some detail.

Forty percent (10) of the parents indicated that they read to their children daily, 44% (11) read to their children regularly (which meant many times a week), 8% (2) read to their children on request, while another 8% (2) admitted that they "seldom" read to their children .

Parents who indicated that they read to their children either daily or regularly also confirmed that they introduced certain "special effects" such as dramatisation, "using different voice effects" and puppets into their reading. Other parents started the story and requested their children to complete the story.

Eighty percent (20) of the respondents read to the child as a family when other family members were available. At least 24% (6) of the children considered reading by grandparents to be a highlight. Eighty eight percent (22) of the parents confirmed that their children requested that they re-read certain books and stories to them.

As a consequence of the above, 96% (24) of the parents claimed that their children developed an independent self-interest in wanting to learn to read, and 32% (8) of the children were capable of reading before going to school.

The following table depicts the types of books that graced the gifted childrens' homes in stimulating their habit of reading:

	TYPES OF BOOKS
1.	Nursery rhymes
2.	Story books
3.	Colouring books
4.	Counting books
5.	Books on shapes
6.	Books on time
7.	Poetry books
8.	Activity books
9.	Computer based interactive story books
10.	Books on animals
11.	Magazines
12.	Comics
13.	Religious books: (The Holy Bible, The Holy Quran, Srimad Bhagavad Gita)
14.	Books on Science
15.	School readiness books (Early Learning Fun)
16.	Children's encyclopedia
17.	Dictionary
18.	Quizzes

Parents have been primarily responsible for inculcating the habit of reading in their children. These are some of the techniques that they have adopted:

- taking their children to the library
- allowing the child to play with books
- giving the child the opportunity to page through magazines

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Eighty percent (20) of the respondents read to the child as a family when other family members were available. At least 24% (6) of the children considered reading by grandparents to be a highlight. Eighty eight percent (22) of the parents confirmed that their children requested that they re-read certain books and stories to them.

As a consequence of the above, 96% (24) of the parents claimed that their children developed an independent self-interest in wanting to learn to read, and 32% (8) of the children were capable of reading before going to school.

The following table depicts the types of books that graced the gifted childrens' homes in stimulating their habit of reading:

	TYPES OF BOOKS
1.	Nursery rhymes
2.	Story books
3.	Colouring books
4.	Counting books
5.	Books on shapes
6.	Books on time
7.	Poetry books
8.	Activity books
9.	Computer based interactive story books
10.	Books on animals
11.	Magazines
12.	Comics
13.	Religious books: (The Holy Bible, The Holy Quran, Srimad Bhagavad Gita)
14.	Books on Science
15.	School readiness books (Early Learning Fun)
16.	Children's encyclopedia
17.	Dictionary
18.	Quizzes

Parents have been primarily responsible for inculcating the habit of reading in their children. These are some of the techniques that they have adopted:

- taking their children to the library
- allowing the child to play with books
- giving the child the opportunity to page through magazines

- reading to the child
- buying the child a variety of magazines and books
- reading themselves and acting as role models
- showing and explaining pictures to the child
- relating stories to movies watched
- making of flash cards and sentences for the child to read

6.19 TELEVISION

The average number of hours that the children spent watching television each day is 2.5 hours, with a median and mode of 2 hours each, and a range of 5 hours.

The most frequently viewed stations were, Kideo, K-TV, YO TV, Cartoon Network and Tube TV. The children were encouraged to watch both educational and recreational programmes. Included in these are documentaries, wildlife, science fiction, and actuality programmes.

Forty percent (10) of the parents substituted not spending much time with their children with television viewing. While this is true, 44% (11) of the parents have restricted their children from watching inappropriate programmes or watching too much television.

Parents have complemented their children's television viewing habits with the hiring of home videos. In addition to the Disney animated classics, cartoons and family movies, the parents have hired Indian movies for cultural development.

When children showed a preference for certain types of movies, all 25 of the parents tried hiring them, made attempts to buy them or, if they were on the circuit, children were taken to watch them.

6.19.1 Effect of Television

All 25 of the respondents were convinced that television had a positive impact on their children's lives. They also admitted that much of what their children learnt and know emanated from the medium of the television. However 48% (12) of the parents indicated that they regretted that there was too much violence on television from which they had to protect their children.

Parents indicated that the following were learnt by children from television :

- logical thinking
- rich imagination
- people, places and things
- singing and dancing
- improved curiosity
- wildlife
- asking questions and discussing what they had seen
- vocabulary, language, pronunciation, speaking
- to make creative things

6.20 ENCYCLOPAEDIAS

Fifty six percent (14) of the parents confirmed that they had a set of encyclopaedias at home. Forty eight percent (12) of the respondents indicated that these were in the form of books, while 8% (2) said their encyclopaedias came in CD-Rom format. The following table reveals the types of encyclopaedias and their popularity in the home.

Encyclopaedia	Popularity
World Book	6
Groliers	2
Britannica	2
Colliers	2
Encarta CD-Rom	2

Of those that owned encyclopaedias, only 65% (9) used the encyclopaedias with their children, "to page through", to read to them, or to use as a reference source for themselves when children asked questions that they were incapable of answering. Parents who had the school readiness programme accompanying the main set of encyclopaedias indicated that they used the encyclopaedia very regularly.

When the encyclopaedias were bought, parents did so thinking that their children would use them as they grew older and moved on to higher classes for school projects, research, assignments and "improving the child's ability to understand certain things".

6.21 DAYCARE

Fifty two percent (13) of the mothers were in full-time employment, while 48% (12) of the mothers were not in employment when the questionnaires were administered.

In the interviews with the 6 sets of parents, they revealed that economic necessity and career pressure prompted the mothers' early return to work. Working mothers spent an average of 7 months with the baby after it was born, before returning to work.

This was complemented by a median and mode of 4 months respectively, and a range of 24 months.

In the parent's absence 28% (7) of the children were left with their housekeepers, 12% (3) were left in the care of a day mother and 12% (3) were entrusted to their grandparents. A further 12% (3) of the mothers who were full-time home executives, and had the child's grand parents living with them occasionally left the child with the grandparents to be cared for.

Only 4 mothers indicated that the maid, daycare mother, or child minder had special skills and expertise to look after the child, but unfortunately, none were explicit about the skill that they had.

Twelve percent (3) of the mothers told the care giver to stimulate the child with "colouring books" and to "talk to the child". Eight percent of the respondents (2) instructed the day mother to teach the child to "dress" and to bathe him/herself. One of the parents declared that she left no instructions with the day mother as "she knows exactly what to do", while another was adamant that she warned the maid "not to shout at the child" but to "gently reprimand him when necessary".

Furthermore, the extended family was used to provide an emergency "babysitting service" in the absence of the child minder or the housekeeper. Sixty percent (5) of the parents agreed that the grandparents, whether living with them or not, often look after their children.

6.22 NURSERY AND PRE-SCHOOL

All 100% (25) of the children went to pre-school, while only 84% (21) went to nursery school as well. This effectively means that only 16% (4) of the children did not have exposure to nursery and pre-school and 84% (21) had exposure to both.

6.22.1 Reasons for Sending Child to Pre-school

Forty percent (10) of the parents sent their child to pre-school exclusively as "preparation for formal school". Twenty four percent (6) of the respondents believed that exposure to the pre-school and nursery school environment would intellectually stimulate the child, as all "learning starts early in the child". Twenty percent (5) of the parents thought "exposure to other children" would take place in the pre-school environment and they would learn to "mix". A further twelve percent (3) of the parents believed that the pre-school would teach the child "responsibility, independence, and confidence", while one parent admitted that she only sent her child to pre-school because she had "work obligations".

6.22.2 Benefits of Attending Pre-school and Nursery School

All, 25 of the parents affirmed that their children benefited from pre-formal schooling experience.

Below, in tabular form, are the benefits that parents believed accrued to their children as a result of the pre-formal schooling exposure.

Benefits of Attending Pre-School and Nursery School For Children
Children: ▸ are more assertive and confident ▸ learn to socialise with ease ▸ have become more independent ▸ cope with daily activities more easily ▸ have become more caring and responsible ▸ have learnt to count ▸ have learnt to identify letters of the alphabet ▸ have become more disciplined ▸ communicate more effectively ▸ speak well ▸ have increased attention spans ▸ are able to integrate in non-racial settings ▸ have learnt to share ▸ sing and play more confidently ▸ have developed opinions about certain issues ▸ have become environmentally aware ▸ have become generally more aware

The above describes in detail results obtained from the questionnaire and information that was obtained from the interviews as well.

6.23 INTERVIEWS

The following section of the thesis focusses on excepts from the interviews conducted with five of the six parents, which will be followed with a full interview with the sixth parent.

6.23.1 Interview One

Aavisha (interview with mother)

I: Did you hear from the teacher that your child was gifted?

P: No, I was not told that she was gifted but that she had the potential to do things faster than her cousins around her, I admit that it was my impression that she was gifted.

I: Do you think that your child has any special attributes in any special area in which she she is gifted?

P: Look, invariably she did well at school; she's able to work on her own; she is confidently stimulated; she's always been like that; she always likes to try things. She's reading now, like the school reader and stuff. Now she can draw.

I: Would you say she is above average in comparison with other children?

P: She is able to cope with the least amount of help from the teacher; she is able to understand concepts. She is able to learn things quickly.

I: Ever since you filled in the questionnaire have you done anything special for the child?

P: Her brothers go to Cami Maths.

I: Has anything changed since our feedback session.

P: As far as she is concerned?

I: Yes.

P: My view of her has changed definitely, I feel I have to do more for her now, and I definitely am doing that, by sitting with her. As far as she is concerned no, not really. She constantly wants to work though, like when her brothers are doing school work she constantly asks her brother if she can do school work. She loves to draw so she is forever making cards for everybody, drawing pictures.

I: And everybody else at home? Has your husband, her brothers and sisters looked at her differently?

P: No.

I: At school has she been treated like any other child?

P: Yes. That is worrying me though because she has the potential and I should do something about it, though I don't think I can leave it to her teacher as she basically has a hard time coping with the other small kids in the class. So from what she tells me they get their words and books, but in the meantime she has done her work and she's bored because there is nothing extra for her to do.

I: Do you think parents' background and experiences have anything to do with promoting giftedness.

P: Experience maybe. I just think you should be able to monitor your child. And you are going to do everything possible to do the best for your child's potential, that's all. Maybe some experience in your life has been very important to you to help you do certain things, but where you come from, I don't know.

I: Do you think not much is being done about special children like your daughter?

P: Yes, there isn't. My nephew is going to a school next year for gifted kids, but I think that, that is the only one around. I don't know how many more there are in Gauteng.

I: In comparison with the past are you doing anything extra for the child now?

P: Yes.

I: What are you doing?

P: She loves to draw; she is very knowledgeable; she is able to read simple words; she is doing that and I am encouraging her. I tell her to draw the pictures and spell the words so she is learning extra spelling. She is able to read on her own, simple books. She likes that and I encourage her.

I: You may not be an expert on biology and brain development, but could you say that brain development impacts upon children's growth and potential?

P: I don't know, basically this is just my opinion. I think she is a confident child,

she is able to think; she is not worrying about anything else. I don't think I did anything different compared to my other children.

I: What kind of advice would you have to offer parents bringing up children like yours?

P: To be an open parent. An open parent. Should she ask a lot of questions, I'm honest as possible. She is always asking things like what does it look like. She is seeing things by my being open and honest with her especially in situations like masterdom you have to be patient. Must be as open minded as possible.

I: And do you think that has worked?

P: Yes it has.

I: In comparison with your other children are you still treating her differently?

P: I just feel the responsibility of me doing extra has changed her. I attended a meeting because I got worried because I do extra for this child. When will I know if it is enough for her, so I was a bit overwhelmed, but I am not sure of the consequence, but I know she has the potential to develop her potential.

I: You haven't done anything special to develop her artistic talent since then?

P: No, yes nothing has changed.

I: Do you find that you are continuing to stimulate her as you did?

P: She is the type of child that wouldn't just accept anything, like you know for example, if I am sitting and reading, she comes and sits and talks to me. You know sometimes I feel like telling her you know what, because you know she is constantly demanding attention; she constantly wants to do work. So she plays for a while, rides bicycle, then she comes inside and goes and scratches for a paper, to be doing something outside, whatever, for a long time. To give you an idea, the other day she said, "okay I know how to spell it," so I said "okay", I spelled it out for her. Then she said, "okay give me a test" and she did it. So I said, " you don't have to do it", but she said, " I want to do it". You have to be constantly giving her something to do.

I: How have your families contributed towards the children?

P: I basically think if a child is happy, secure, they definitely will be able to do anything that they put their mind to. She comes across as very confident and with secure habit, which is a plus factor for her.

Aavisha is considered to be a confident child whose parents have actively engineered her stimulation. She has been encouraged to read, draw and participate in many physical activities.

Since the administration of the questionnaire Avisha's mother has changed towards her, as she feels that she needs more attention.

Avisha's mother is of the opinion that parents of gifted children need to challenge them, while simultaneously being "open"and honest with them.

6.23.2 Interview Two

Prana Tiara (interview with father)

I: My first question is, having filled in the questionnaire, do you agree with the teacher's assessment that your child is different or bright, and in what way?

P: She describes it like stars in a class and it might be contentious to do the graphic thing and describe her as bright. She is a very hard worker.

I: You have seen her at school. Have you seen her grasping concepts faster?

P: Very hard, extremely hard.

I: So you would say that she is very motivated and you would agree with the teacher then?

P: Yes.

I: Possibly after having filled in the questionnaire do you think you would want confirmation from us or not? Any bit of information that may seem significant to her being gifted or bright?

P: That question would focus more on what you do for the child to make the child watch movies or what to make them focus on more vividly as a whole?

I: Okay, what would you have liked us to focus on the kid?

P: You have to get it from a clear perspective day-to-day, like what she does, the way she acts. It's not just one thing; the qualities are totally different. I must say she is bright, she seems bright, the quality like the helpfulness, sharing, you know, all the qualities. You must check how she takes care of Calim and her sisters. Most children probably won't do this; they would rather play with their own circle of friends.

I: Since completing the questionnaire have you done anything special for her? Have you taken her out differently? Have you done anything that you normally didn't do?

P: Okay, like most parents we can't really take her out much, but last weekend we went to *Holiday on Ice*, but it is purely entertainment. We don't think like going to the movies it is purely entertainment.

I: Do you think she has any special attributes to be a very bright child, anything special, any special capacities, any special area?

P: I don't know. She is clever, very clever; like she does some very normal things you know like she will come and show us her creations.

I: You may not be an expert on brain development. What can you tell me about brain development in terms of possibly your child? What you did to stimulate her? What has been done to stimulate children like her to develop her.

P: I think it's exposure. Firstly exposure to media right, because 90% of the things they learn from there we can't teach them. It is not past her ability. We

try to get down to her level of doing things. We can't do it basically right, so the media is there for that.

I: Do parents' background have something to do with promoting cognitive development and giftedness in children?

P: Not necessarily, especially in our culture and in our background whatever we always wanted for our kids, we are not content to stay the way we were, maybe like that background rubs off or something like that. You find doctors' children in the more prominent positions, you know that kind of stuff. Not necessarily more intelligent, more well-mannered that kind of stuff like the background and the actual talent.

I: Do you have any special advice for parents' with children like Tiara on how to cope with them?

P: They all ask a lot of questions and you tend to get irritated with them, you have to be tolerant, helluva tolerant, especially with me, I suppose. I see something I want - if it is not of any educational value and of entertainment I get it.

I: How do you determine educational value of the stuff?

P: Look they watch TV right. They want to play on the computer so I put it on and I let them play with it and I let them type. If they want to see a certain movie I go out and either buy it and keep it.

I: Would you say the pre-school has had an influence on your child's development to a certain extent?

P: To have people her age around her you know like she is more happy, you know like pre-school helps, it helps a lot.

I: Would you say that early identification of children like her is important?

P: Not necessarily. It is important; the thing is they have got to grow right irrespective of their intelligence, like most. 90% children they would want to play and carry on. They do not want to worry about coming home and practising writing names and the like. With Tiara we do not have a problem.

We are like concerned when it comes to her. If she had come home with less than most stars I would bad.

I: Do you put pressure upon her?

P: I put pressure upon her, that's from my background. When news comes home that homework wasn't done, there will be no playing, no running out.

I: Do you have any special plans for her, that you want to stimulate?

P: No. I am not going to do anything for her, to stimulate her, like taking her to an enrichment class. She can take her own pace now that she really knows.

I: You said that you were not going to do anything special for her like taking her to an enrichment class. What's your reason?

P: The thing is like I don't want to put pressure on her? Can't have too many stuff to battle with. I don't believe she has to go to a private school either even if I could afford it. She's got her own agenda basically. I don't want to send her to a private school where she has got to travel and that kind of stuff. Rather be where she is comfortable and grow up in her own place.

I: How's her reading now?

P: Extremely good. Once she recognises something she recognises it. Like now.

I: Do you want to say anything to me that you considered to be important and valuable that I would be able to share with other children and other parents?

P: They need to read, honestly. If you talk to kids now you expect nothing imaginative or like if you talk to someone who hasn't read a book you are not worldly in your ways.

Prana Tiara's father believes that despite her being "bright" she is a hard worker. This is a habit that he tries to foster. He is confident that exposure of children to different social and recreational activities will stimulate them.

Parents need to display patience and tolerance to the questions that children ask, and answer them honestly.

While background and culture are important factors that help children actualise themselves, children need to be treated with respect.

6.23.3 Interview Three

Kayrav (interview with father)

I: I am going to ask you one or two things to verify with you whether the teacher's identification of him as being bright, or gifted has been right?

P: Does the teacher say that?

I: Yes

P: Well I do think he is a bright guy, but I'm his father. But then the teacher was Gita, and she is related to Nila.

I: So would you say that Gita was prejudiced.

P: I'm suggesting that she may have been prejudiced in some way, but I would agree that he has many talents.

I: Now where do these talents lie?

P: Definitely with his father. His mother's got a lot of talents also.

I: So if we talk of the talents where do these talents lie? Do you think he has any special attributes in any specific area or not?

P: I feel like this, whenever I shout at him, I don't let him get into an aggressive streak, I take him out some time.

I: On the other hand would you consider him like his teacher and believe he is a hyper-active child with lots and lots of energy? How have you directed this energy thing positively?

P: He goes to school and then he goes to the creche

I: Which créche does he go to?

P: He's got a daycare mother.

I: Do you think he's had any special, got any special things, special attributes- artistic, music or anything that is different from other kids?

P: I can't say.

I: What have you done since Madam Gita said he was good or gifted, have you done anything special, or taken him anywhere, or done anything?

P: No! You see we went on an excursion at Sterkfontein, we took him there, he enjoyed it. Like it was his first experience of a cave. And then whatever new experiences we've had ... there is a lot of small things, like we've taken him to the beach in Durban, you know he knows all his family by name and he knows how they're related, from a very small age, from the age of four, in fact not even from the age of four, from the age of three, we had already been here in Johannesburg. He knew my nephew, who my brother was, you know he knew how the person was related to me. And when they asked him, in fact I remember the one incident when he really got us by surprise. He was about two years old and there was a white Camry on the road, and he calls my big brother Papa - as we were going past the white Camry he said there is Papa's car. So I just thought he's only a year and six months and he can recognise a Camry from other cars. And that caught us by surprise. So I asked him who's Papa, he said daddy's brother and he was only three. So he's very good at telling how people are related, and another thing about him, if you give him a telephone number and if you really want to phone he'll dial the telephone number. And without you knowing it he'll phone the man and when you say who you are phoning, he'll say no I'm phoning my aunty and then you'll go and check on the phone to see if he's phoned the right number and you'll see he's speaking to his aunty. So in that way he has surprised us a lot.

I: Have you done anything special for him, like taken him to any special courses or programmes.

P: No, not really.

I: Have you done anything special for his stimulation and brain development.

P: You know what I did ask for a happy child.

I: Are you saying spirituality has something to do with it?

P: Yes definitely - in that I have no doubt, I can tell you that I asked for a child before Kayrav was born. I had a very serious prayer - I want a child that's happy. Kayrav, from the time he was born, he was born with happiness. He's been an active child. I remember even at one and a half he was climbing over everything. We had to put barriers for him you know.

I: How do you promote brain development?

P: I think to me the greatest value a person can have is love. To me the greatest value is love, in any direction that you go in life the only thing that is making success and achievement and making experience in good relationships is love

I: Do you think parental background has anything to do with, giftedness?

P: The father and mother must pray a lot. His granny was a great believer in God, that's my mother. Before he was born she would make sure that Nila was having enough calcium, you know vitamin C - put her on multi-vitamins.

I: When it comes from parental background would you say parents jobs, occupations, qualifications play a role in promoting giftedness in children.

P: You know what the most important thing ? Does the parent feel like a failure. How the parent perceives himself as a human being - that is what he is going to pass onto his child. If he perceives himself as a failure then your child becomes a failure. What he is going to do, is he is going to pass onto his child according to how the parent perceives himself.

I: Do you have any advice for parents with children like Kayrav?

P: They must pray and encourage their children.

I: How should children like Kayrav be handled by parents, family and friends?

P: You as the parent of the child you understand the child, first you would know when the child is smart, then you accept he is smart - he knows certain things that you at his age didn't know. The second thing is you realise he goes to certain places and he can't sit still, he wants to play. You don't want to fall into the category where you tell him every time don't do this and don't do that.

I: He doesn't have any siblings, what is his relationship with cousins.

P: Oh it's fantastic.

I: The younger, or the older one's?

P: With everybody. They all love him. They can communicate with him, they feel comfortable with him and he feels comfortable with them. The youngest one is his age, he can play with that person and feel comfortable. My oldest nephew is 22, that guy is even comfortable with him. He can communicate with that guy. I know when I was his age I couldn't communicate with somebody his age, because they'll tell you go play with the "laities".

Kayrav's father believes that Kayrav is a "bright guy". This has been confirmed by the teacher and family friends.

Although Kayrav does not display any artistic or musical qualities, he is considered to have an excellent memory. He is confident and is able to relate well to adults.

Recreation and exposing children to many stimulating and challenging situations is necessary for the development of mental acuity.

Kayrav's father is convinced that parents must bestow as much love as possible on children as this contributes to "success and achievement". This must be accompanied by prayer which has a calming effect on the family and it's accomplishments.

6.23.4 Interview Four

Cheyane (interview with father)

I: Since I administered the questionnaire, do you you want to say anything to me about the questionnaire or anything specific?

P: Really not.

I: Would you agree with the teacher Mrs Leptika, that your child is special, bright, or different from other children in her class.

P: No, no.

I: On what grounds would you say that?

P: From my experience with the teacher - I had a good relationship with her; Cheyane shows a tendency to do better than other children.

I: Elaborate a bit.

P: She was way beyond the other kids - she was talking and formulating words by 9 months. She was toilet trained by 1 year two months.

I: Have you done anything personally for her which you would consider to be different or to have promoted the mind of this lovely child?

P: Not that I am aware?

I: Are you still treating her normally or are you treating her differently from the child you have now?

P: In that sense with a new baby around she has been more responsible or tried to act more responsible, she tries to help us. In terms of that she has to do things differently.

I: Have you done anything special, got her onto a special course, have you sent her on a special program; something at school or something at sports?

P: Not really.

I: Have you considered anything special, does she have any extraordinary attributes in specific areas like music, art, drama, science or even languages?

P: She shows an affinity towards the arts, she is not a very sports-orientated person.

I: When you talk about the art, what specific in the arts does she show interest in?

P: She is a creative child, we never really explore it to see what she's good at. We want to give her that opportunity when she decides what she wants to do.

I: In the arts is she musical, an artist, is she a painter?

P: She's a little somewhere there.

I: What do you mean a little?

P: She hasn't shown an affinity or subject or something specific, but basically she is a creative child and she is exposed to everything.

I: So she is at Daxina Primary is it? Now what is her progress at school now like? You did say there's been a drop, but what has her progress been in school, what's her achievement been like?

P: She is reading fluently, for the progress or the stage she's at now she's reading well in fact much better than before. She's a quick learner in maths and the languages.

I: What kind of feedback have you had from the teachers?

P: Apart from us phoning them and finding out not much.

I: Have you sent her on a special program on computers and things like that?

P: She is not despondent or anything and she doesn't need that. Cheyane is a child we would tell her go outside and play and she would. She would rather stay indoors and take her books out, that's her fun.

I: And how's her reading now - is it good?

C: "Daddy I like to read, I like to read books in the morning because books help you the whole day".

P: You must learn to read first before you can work on your computer.

C: "But you see my teacher tells us to read."

I: What kinds of problems have you had in terms of bringing up Cheyane?

P: Discipline, she's got a mind of her own. Whatever it is. She interprets things like I said she's way beyond her years. She acts like a teenager. When you tell her this is what you should do, she questions you why should she do this or that. She becomes, we call it difficult, but she's not really.

I: Do you think that parents' background, educational level, job that you do, how many children you have, have an impact on the growing up and development of a child?

P: Yes.

I: In what way specifically?

P: Well personally in the way that I was brought up academically you strive to do the best that you can. Education is the ultimate, knowledge is powerful.

I: Other than the education is there anything else in terms of parents background.

P: Obviously the way you are brought up, you eventually become like your parents. It's not specific, you can't bring it down to one or two things, ultimately your background or where you grew up (...) so you can't narrow it down into specifics.

I: What would you say about brain development and stimulation? How have you promoted her development?

P: Consciously.

I: And unconsciously?

P: I am not aware of it. We never expected her to turn out like this. We never said this child would be a doctor or a professor.

I: Did you ever think she was special or did you do anything special "to make her clever"?

P: Not out of the ordinary, we realised when she was a toddler at a year and she was talking then. The thought never crossed our minds that she's extra special or whatever, we knew she was intelligent, we never forced her, we never put extra pressure on her to do or to achieve more than she could.

I: Who brought it to your attention that she was bright?

P: Nobody.

I: Did you nurture it in anyway?

P: Nurturing in the sense that we never bought her normal toys, we always made it able for her to think for herself in the choice of toys. We let her choose whatever toys she wanted.

I: What kinds of advice would you give parents with special children like her?

P: Don't make them feel any special. They are still kids.

I: So you wouldn't distinguish them from the rest.

P: Sure.

I: How do you think parents, friends and family contribute towards her development?

P: We have had in terms of her development, namely when she was born she was the first child amongst my friends and amongst my wife's friends, and she's been the pet all round.

I: Do you have anything that you want to say to me about her or generally about children and development.

P: Give them the best that you can.

The teacher reported that Cheyane has the tendency to work "better and faster" than children in her class. This was confirmed by Cheyane's parents who indicated that

she began speaking and walking earlier than other children her age. She was also toilet trained ahead of her peers.
Presently she is excelling in Maths and the languages at school.

Cheyane is considered to be a creative child with artistic tendencies. However, her parents believe that they will help her develop her artistic potential when she indicates that she wants to pursue it.

Cheyane's dad believes that all children should be given the best that parents can.

4.23.5 Interview Five

Nikil (interview with father)

I: Let's pick up the points, the questions that we have done in the questionnaire. I know it was a very long questionnaire and you acknowledged it.

P: Yes it was.

I: Do you want to add anything to the responses that you gave in the questionnaire.

P: About Nikil specifically?

I: No, not anything specific, but about Nikil, a special child, being so called bright or gifted in a sense.

P: Well I don't know why you think he is a special child, bright or gifted, given the background that he has. Given the background that we come from, the emphasis is on all children. That's all that we as parents can ensure that he gets as good an education as we can afford to give him at this stage.

I: Do you agree with the teacher that Nikil has certain special attributes you know as a child with potential?.

P: Yes, I agree with teacher that he has certain attributes which he can always use for the rest of his life. He is a quick learner.

I: What have you done since the initial questionnaire was given to the teacher and you completed it. Did you have thoughts that this child has some kind of potential? What have you done for him?

P: Nothing different to what I have done over the years. We are just carrying on in the same way in the hope that our intervention in his education has been useful. I can't see it any different.

I: Using the devil's advocate. I suggest that up to now you think you've offered the best and there's no reason for doing anything different or you could have done one or two things?

P: No I don't think so.

I: Okay

P: No I don't think I've offered the best. What I do think is that we are in a certain set of circumstances where we go to a primary school around the corner and given the opportunity I might change these priorities in his school environment and take him to another school where I think he can get a more holistic education rather than just an academic one.

I: What kind of special attributes do you think your kid has-any specific area that he shows any kind of excellence in.

P: No he is a very..., I don't know the right word to use but he is a very visual child, visually he is very very strong, things that he sees are articulately put back later on. Other than that I don't think that there are any more special attributes than other children. I think he has a better background in terms of parenthood.

I: What do you think of parents background in terms of development?

P: I think it's not background I think it's what parents' perceptions, ideas about educational development that matters.

I: Okay

P: I think we as parents are very much aware that strong educational background who supported ourselves will help you attain whatever you want to attain. I think the background has got nothing to do with it, but rather our beliefs as parents about what education is about and where we would like to see our children.

I: And can you with the parental baggage that you bring into the relationship bring about any radical changes.

P: As in?

I: Where parents come from whether it's political, educational, cultural - you know all these values that you have?

P: Yes I think all these values have an impact on your values. The socio-economic background of parents have a great impact on their kids education and development. Politics also plays a part, politically we were disadvantaged.

I: Anything specific about your personal attributes?

P: I think I will be able to say high values and high moral attributes has played a part and we are just trying to pass those same attributes to the kids.

I. What is his relationship with his peers like at home, siblings?

P: His relationship with his siblings is very good, very strong, these kids have bonded together very well. With his peers at school he tends to pick individuals and wander only with certain individuals. He's definitely, definitely very picky. Traditionally, he has been a very quiet child, very reserved child. He's gone into the school environment now and he has

identified one or two individuals in his class whom he really likes. He actually doesn't fancy all of his class mates.

I: What have you done specially for him?

P: We have just bought him a bicycle to show him that we love him. We ensure that all his books are kept properly and he needs to understand that - that's the important part of the education process. Respect for his books, respect for his material objects, other than that nothing special just - bearing in mind that both of us are working during the day.

I: What do you think you have done at a conscious or unconscious level to promote stimulation and brain development.

P: Consciously you just throw books at him, not literally but find that reading has always helped all other kids to understand things better and to articulate it as well. Also TV programmes that are educational, science programmes, nature programmes, we encourage him and his siblings to watch those.

I: Do you have any advice for parents who have children like him?

P: The only advice, Vijay, that I can give is that parents must pay attention to their children, be aware of what their children are saying, what their children are seeing, be aware of what their children are experiencing and in any way possible to enhance their experiences, to enhance the experience of the school by introducing other types of books to the child and to introduce educational videos to the child. Nature videos, science videos, that sort of thing. One programme I encourage them to watch is National Geographic, which I personally find fascinating and educational.

I: And handling them?

P: You must handle them well, I never hit my children, I reprimand them, sometimes I come across very strongly when I reprimand them.

I: What problems have you had in bringing up your child?

P: None that I can think of. He's a growing child, no behavioral problem's, he's normal, he's fidgety like a normal child - no major behavioural problems with him.

Nikil is described by his dad as being a "visual child" who has the ability to articulate what he sees later.

Nikil's dad is convinced that family background, culture and high moral values are fundamental for children's success. He considers reading and watching educational programmes on television important for the successful stimulation of children.

He is of the opinion that parents who are sensitive and aware of their children's needs to enhance their school experiences.

6.23.6 Interview Six

Ayant Mohile (interview with mother)

I: Do you agree with the teacher as having nominated your child to be someone to have some potential or being gifted?

P: Yes, in terms of the fact that his language is more advanced than kids of his age, he is very creative, he is very intensive in his thinking, he says things with logical reasoning behind it. And in that way it indicates that he is capable of more creative and intense thought.

I: Do you think he has any other attributes other than thinking?

P: He builds things with his hands, he does lots of things with his hands. His mental perception in terms of solving problems according to me is more advanced.

I: Now that you have completed the questionnaire do you want to include anything, that maybe we have excluded. Do you want to tell me anything more about Ayant?

P: No I think that questionnaire was quite comprehensive it covered his total development from birth to after. It explained everything.

I: What have you done for Ayant possible since the beginning of this year, something special or what have you done that you considered special for his development until now, have you done anything extra?

P: I think the extra comes from his elder brother in that when Pranav sits to do work Ayant is always there, because Pranav is working at a level that is more comprehensive than that which Ayant would work on. Ayant would have picked up more from Pranav in terms of research that Pranav does for his assignments. Ayant contributes towards these things by saying and being encouraged to discuss things when we are working with Pranav.

I: Is there any kind of special relationship that he has with his peers, his brother?

P: Yes I think he and his brother with the small age gap that they have between them are more friends belonging to the same age group than having a larger generation gap existing between the two. So they can talk, they can play, they can discuss, they argue, they fight and to me that is important that they have such a relationship.

I: You said all the special things came from his brother, but haven't you as a parent, done something special for him, sending him to computers classes or whatever?

P: He's been for music classes which is special because it gives direction. He's been for computer lessons, his father's taken him for computer lessons at the Centre where the father has these computer lessons running. Ayant has been exposed to lots of new places in terms of excursions that he's been on with the family.

I: Alright, I want to ask you something on brain development. How do you think we could contribute towards the stimulation and brain development of Ayant or other children? I don't want you to become scientific, but just tell me very briefly what can be done for children's brain development?

P: By exposing children to situations where they are asked to do lots of thinking. To do lots of reasoning about why situations are the way they are, what kinds of problems they could solve, listing problems and making them think. The whole thing is allowing children to think and not providing them with simple answers to complex situations. They've got to think up answers of doing things and always accepting what they say has value, not rejecting what they say, not mocking what they say, but accepting that they also have something to contribute. And making them feel that their contributions are valued.

I: Do you think we need to look at special children in some kind of special way or we need to handle them differently from other children?

P: I think you have to respect what they have got to say more, you've got to allow them lots more credibility in what they're saying and doing, and as parents that's where we fall flat, we feel that children don't have any kind of credibility, they don't know or they aren't aware of real situations that are taking place and that's not true, and that's how these children have to be handled, not as children who are just there because we want them to be there, but as children who have something to contribute to situations and making them feel that they are worth while in that kind of situation.

I: Do you think parents' background plays any role in stimulating development and intellectual growth?

P: Yes, in that sometimes parents get so involved in living or merely surviving that they forget that children need other kinds of stimulation, that children need to be exposed to other things and if parents feel, it depends upon what parents feel are

important that allows children to grow, if parents feel making money is important then children get the same kind of stimulus. Children would grow up under the same kind of influence that money is important. Parents feel that life is important and exposing children to lots of things that will enhance and enrich their lives then children grow up feeling that way so it is the parent's background that stimulates children in different ways.

I: What else can you tell us about parents, qualifications, occupation, do they have an impact?

P: No, education and qualification don't have any kind of impact upon parents. It's just that now with the parents being more aware, all parents, irrespective of the kind of educational background that they have are more aware of education, education plays a great role in their lives. Parents are going to stimulate the children because all of us want our children to be the best that they can be. So we would encourage children to be stimulated and all of these. And also the media has played a great role in influencing parents in that way, in that you have things advertised, in that you have parents being told about new products that come out in technology and that has an influence on parents decisions.

I: So you are talking more about parental background and you say that possibly educational background doesn't have an influence, could you just tell us more about the parents and how their background could play a role?

P: But I just told you that technology and media all of that influences parents' background and any parents' background will influence these things. Parents will look appropriately to supply the kind of stimulation that the child needs.

I: Do you have any advice for parents who have children who are considered not the run of the mill who are considered special, gifted or different?

P: Yes parents must pay attention to such children's needs and satisfy these needs by providing things that these children need. You cannot assume that these

children would in their own way satisfy their own needs because children who become bored like this become difficult children, because they are not receiving the kind of stimulation that will allow them to express what they feel, to express what they need and we have got to pay attention to how we can accommodate them with their special needs.

I: And handling of them at school, or friends, or family?

P: It's the same kind of problem, you have these children with special needs who can become difficult children in the class or they can be the children who are the teachers' pets, because they do everything according to rules so in that way teachers have to handle these children accordingly.

I: What would you say is the progress of your child at school or how is he faring at school at the moment?

P: This is merely a personal opinion I am expressing, but I feel that he is coping very well. He is coping enough in order for him to be promoted to the next grade and I don't have a problem with the rate at which he is progressing, because I can see a difference in what he does, I can see the difference.

I: Go on about his progress.

P: I'm quite satisfied with his progress because I see the difference daily in how Ayant thinks, how he does his work, the kind of individual activity that he engages in, his independence comes forth strongly, so I am quite happy with the rate at which he is progressing.

I: Over the last year or since the teachers identified anything special, have you done anything special for him?

P: Again it comes to the question that you asked earlier, "Has he been engaged in any kind of activity that was different?" and then I said that he had been for computer lessons. He has been exposed to many more workbooks and worksheets. He's been taken out on different kinds of excursions with the family,

so those are the things that have been done with him.

I: Do you think money has anything to do with it, or are there cheaper ways of doing it without money?

P: Yes, yes there are lots of places that you can take the child to that don't cost money. You can take him out on a picnic and expose him to nature by pointing out different birds, by pointing out different plants, talking about conservation and preservation. We don't always need money to do these things, we could take a child out for a walk and engage him in lots of discussions. Those are the kinds of things that you could do, child can be engaged in play, you can play with him you can look at innovative and inventive games that you make up. These are the things that the child doesn't need money for. So you don't always need money in terms of entertaining your child.

I: In respect to the school again he doesn't go to any special school, he goes to a government school and are you happy with the way that they treated him?

P: Yes I am happy with the way they treated him because they have realised that Ayant has some kind of potential and they have stimulated him accordingly. I'm quite happy with what he has been doing.

I: Do you want to say anything about the child, with respect to the questionnaire?

P: I thought it was a long questionnaire, I thought that parents don't like sitting for many hours completing a questionnaire. Maybe if you can cut it down by a few pages and a few questions it would have been easier. Anything about developing, growth, handling children?

P: In terms of what?

I: Of children like Ayant.

P: Respect, it is important that we respect them and we recognise what they have to offer to the family at large and the contributions that they have, it is important that we pay attention to the contributions that they make and we recognise them

and praise them for their contributions. Because children like and they thrive on praise.

Ayant's mother is believes that he is gifted. She believes that he is creative, logical and an intense thinker.

He plays sport and has been for computer and music lessons. His mother thinks that technology, the media, and the parent's background are factors that promote intellectual development.

She asserts that parents' of gifted children should pay attention to satisfying their children's needs which otherwise would result in wasted potential. She is of the opinion that praise and contributions from the family also play a role in promoting intellectual growth and stimulation.

6.23.7 Synopsis of the Interviews

The parents of the children interviewed have indicated that they all believed that their children were "bright" or gifted. There was consensus among the parents that their children should be intellectually stimulated so that they could realise their true potential.

Parents have indicated that their children developed faster and were better than their peers in many activities.

It was also argued that culture, background and moral values played a significant role in actualising the children's potential .

Ultimately, parents conceded that sensitivity, tolerance and awareness of their children's needs were important in fostering a stimulating learning environment.

6.24 CONCLUSION

This chapter focused on the data obtained from the questionnaire and presented excerpts from 5 of the 6 interviews conducted, with the sixth interview being presented in its entirety. The results indicate that parental intervention and background do play a major role in the promotion of cognitive development in pre-school children.

CHAPTER SEVEN

FINDINGS, CONCLUSIONS AND RECOMMENDATIONS OF THIS RESEARCH PROJECT

7. INTRODUCTION

As indicated in the text of the thesis there is a paucity of literature with respect to the background of and giftedness in Indian pre-school children. Although there are studies that indicate that certain facets of their home background may impact upon their intellectual development and later success, these studies have not been explicit with minority groups in multicultural societies.

This study has distinctly unpacked, and triangulated Indian parents' perceptions of giftedness, with the teacher and peer nomination, the JSAIS-R and parents' opinions about how they believed they promoted intellectual development and potential in gifted pre-school children.

As a consequence, this chapter will present the findings, conclusions and recommendations with respect to identification, tests and questionnaires administered.

7.1 PROBLEM FORMULATION

The main problem was:

Did the parents' educational input have an influence on their pre-school child's

intellectual development?

The following sub-problems were identified:

- how did family background impact upon the pre-school child?
- what was the impact of reading and television on the pre-school child's development?
- did daycare and pre-schooling impact on the pre-schooler?
- how did recreation and exposure to technology influence the pre-school child?
- in what ways did the different facets of child development affect the pre-school child's intellectual emergence?

This research was aimed at identifying the factors that parents considered important for stimulation and cognitive development and the role that they and their background played in promoting this. This effectively means that intelligence and cognitive development in children are not considered to be stagnant, but rather in a constant state of flux to accommodate the specific interventions and activities that parents provide. It was the contention of the researcher to indicate that parents work at an intuitive level, pursuing the belief that their children have talent, "are considered to be bright", and therefore need to actualise themselves. On the one hand, parents exposed these children to activities, games, technology, books and other stimulatory material that they believed will contribute to their children "achieving the best that they can for themselves." On the other hand, they hoped that the assistance that they offered to these children will support them in achieving their goals.

7.2 AIM OF THIS STUDY

The main aim of study was:

To determine whether the parents' educational input had an influence on the pre-school childs'intellectual development.

The other related aims were:

- to determine whether the parents' background impacted upon the stimulation of the child.
- to assess whether activities like reading, watching television, attending daycare and pre-school, and exposure to different kinds of recreational activities and technology affected the pre-school child.
- to recognize the manifestation of the pre-school childs' motor, social, moral, and cognitive development.

7.3 METHOD OF RESEARCH

7.3.1 Theoretical Study

The study highlighted the development of the Indian pre-school child, from conception to the age of 6 years. It focussed on the acquisition and attainment of the psycho-educational categories and how these have impacted upon the child's development. There was brief reference to the child's brain development and physical development.

Erikson's theory formed the basis of personality development, while normative development was illustrated by Kohlberg's theory. Cognitive development of the

child centred on Piaget's theory. The sensorimotor and pre-operational stages were expounded upon in detail, while mention was made of the concrete operational and formal operational stages. Against this background, parental influence, position in family, gender, daycare, home environment, parental activities and stimulation of the child have been highlighted.

7.3.2 Empirical Study

This study centred around identifying factors, activities and possible themes that parents' have considered to be relevant for the intellectual development and stimulation of their pre-school children.

In order to successfully investigate what the above criteria and perceptions are, and how parents have actually acted on their hunches and have developed a plan of intervention to sustain and nurture giftedness in pre-school children, the following steps in the research process were embarked upon:

7.3.3 Hypotheses

7.3.3.1 The main hypothesis of this study

Intellectual development can be promoted in pre-school children.

The main hypothesis was divided into the following sub-hypotheses:

7.3.3.1.1 Parent and child biographies impact on intellectual development.

7.3.3.1.2 The stimulation of various aspects of child development is an important consideration for promoting giftedness.

7.3.3.1.3 Stimulation (toys, play and technology) fosters development and impacts

upon giftedness in pre-school children.

7.3.3.1.4 Television and reading influence gifted pre-school children.

7.3.3.1.5 Daycare and pre-schools sustain intellectual development.

7.4 IMPLEMENTATION OF RESEARCH

The research process was divided into the following phases:

7.4.1 Identification and Selection of Pre-school children

The researcher, in consultation with school teachers, pre-school teachers and people who were aware of the research project, identified pre-school children and their parents, in Lenasia South. The researcher screened 83 pre-schoolers using the parent, teacher and peer nomination forms at school. These forms were designed by HSRC to determine whether these pre-schoolers fulfilled criteria to be considered gifted.

7.4.2 Administration of The Junior South African Individual Scales (JSAIS)

Of the 83 pre-schoolers initially selected, only 58 met the minimum criteria and were chosen to be considered for the next stage of the design. Of these 58 pre- schoolers who satisfied the minimum criteria, only 51 were available for the JSAIS to be administered..

7.4.3 Questionnaire Administration

Only 25 children with IQ scores of 130 and more and whose parents were amenable,

available and in close proximity to the researcher, were chosen to be part of the questionnaire administration. Three (3) parents were substituted during this phase.

7.4.4 Feedback Session

At this stage a major feedback session was held to review the preliminary results, with a view to assisting parents to place their children appropriately, or referring them to agencies such as UNISA: Institute for Social and Health Sciences, and the Johannesburg College of Education: Centre for Gifted and Enrichment Education. At these centres parents would be provided with the necessary counselling and children with a curriculum that would take into account their needs as exceptional children.

7.4.5 Interviews

In the final stage, parents of 3 boys and 3 girls were chosen to be part of the non-structured and non-standardised interview process to triangulate the research process.

7.5 DISCUSSION OF RESULTS AND FINDINGS

The more significant and impact bearing results presented in Chapter 7 will be discussed in relation to the hypotheses and sequence of the different research processes described above.

As the sub-hypotheses help in the evaluation of the main hypothesis they will be considered first.

7.5.1 Parent and Child Biographies Impact on Intellectual Development

7.5.1.1 Child biographies

Children in the research cohort were between 5½ years and 7 years old. Although

it would seem that there may be emotional and maturity differences within the group, these differences may not have been marked enough to make a significant impact in the identification and research processes. However, these differences did seem significant, when they were compared, at an informal level, to other children from the same age group who were not included in the research sample, but had formed part of the screening in the research process.

Of significance is the fact that these children hail from small families with an average of 2.36 children per household. This is smaller than average of 3.6 children per family which is the national average for the South African Indian population. This ties in with the fact that 80% of the children were described as "planned". Forty percent of the children were depicted as being the eldest or only child, while 36% of them were considered to be the youngest in their families. This may be significant in terms of the middle child who appears neglected for consideration as one with certain distinct and unique attributes. In terms of family size and birth order these children seem to have been in a position in which they could receive a lot of personal attention from their parents.

The type of pregnancy and birth that the mother had also seems to impact upon the child. It was found that 84% of the mothers reported to have had normal "trouble free" pregnancies. Ninety two percent (23) had natural births, while only 8(2%) had caesarian section births. The norm in the Lenasia area for normal births is 70% and for caesarian section deliveries is 30%.[1] This also seems to impact upon the normality and constitution of the child, since 92% of the children were described as "healthy" immediately after birth and 88% were born without any abnormalities.

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[1] Information obtained from Dr S Vallabh, gynaecologist at Lenmed Clinic.

Although the breast feeding period of the children differed, from 1 month to just over 18 months, it was revealed that 84% of the babies were breastfed by their mothers and this depended to a great extent upon the mother's return to her job after the birth of the baby. Breast feeding positively contributes to bonding between mother and child. It also provides the child with a sense of closeness to the mother, whilst simultaneously reinforcing a commitment by the mother to the child that she would act as a source of emotional support and nourishment to the child.

7.5.1.2 Parent biographies

Although the respondents were not explicit about the nature of their marriages, it would seem that marriage was a critical factor in the parent biographical data, for 100% of the parents indicated that they were married. This is significant because it provides the child with a safe and stable home in which to grow. It could also be argued that it facilitates a sharing of home and parental responsibilities between the parents, while alleviating the stresses found in a single parent family.

The parents' religion does not seem to impact on the selection of the children as the percentages of 80% Hindu, 12% Christian, 4% Moslem and 4% indicating Buddhist tendencies without subscribing to any specific religion, are a fair reflection of the general population and more specifically, of the Lenasia South area where the sample is drawn from. However, the fact that 96% of the parents subscribe to a specific religion is significant, for it indicates stability with respect norms, morals, values and principles, As they focus and direct the lives of family units.

It was further revealed that the educational background of the parents was not very significant either. All parents (fathers and mothers) had at least a Std 8 qualification, while matric seemed to be the qualification that predominated for both parents, with

only 44% of the fathers and 28% of the mothers having a post matric qualification from a technikon or a university. At a superficial level, this may seem to be higher than the general population, but it coincides with the area from which the sample is drawn.

One hundred percent of the fathers were in full-time employment, while 52% of the mothers were in full- time employment when the questionnaire was administered, or had returned to their jobs after the birth of the baby, (cf. daycare). This implies that in all the households there was at least one permanent source of income and 52% were dual income families. This speaks to the fact that relative financial stability is essential for ministering to the educational and associated demands of growing up children with varied interests.

7.5.2 Child Development Is a Consideration for Giftedness

7.5.2.1 Speech and Language development

While 56% of the respondents expressed the opinion that their children initially "babbled a lot", 40 % considered their children's babbling to be normal. Forty four percent of the respondents expressed either excitement or encouraged the child to continue babbling. It would seem that parents played a vital role in the language development of their children by talking and interacting with them as from a very early age. All parents spoke to their children, often in a mediating fashion. The nature of the parent talk focussed on "describing and explaining things" as well as "singing and reciting nursery rhymes" to the child. Forty eight percent of the parents used reading and story-telling to expand the child's vocabulary and language development.

7.5.2.2 Physical and Motor development

From the findings it is clear that the early motor development of the children in the research cohort was superior to averages obtained from the literature, and in relation to informal comparisons with children the same age, when the selection of the sample was done (cf 6.10).

Ninety two percent of the respondents considered their children to be "above average" or "slightly advanced" in terms of height and weight when compared to children their age.

This implies that these children were at a head start in comparison with other children their age, and were therefore capable of more difficult and complex physical and motor activities.

7.5.2.3 Social development

Although social development has not been an item of priority on the agenda of parents in promoting intellectual growth, children were afforded opportunities to visit friends or have friends visit them. This was enhanced by parents encouraging their children to interact with children of different races, genders and religions. Parents who were interviewed, viewed the inter-cultural exchange as an excellent way of learning about other people. It would seem that the parents were not rigid, but were open minded and wanted to expose their children to various social situations. This, they were convinced would augur well for their children later in life.

7.5.2.4 Moral and religious development

Religion played a major role in the lives of 88% of the respondents. It would appear that one of the ways in which the moral fibre of a family can be woven is through religion. Religion dictated the ways in which children were brought up, as well as

"morals , values and ethics" that parents wanted their children to embrace. Religion and the notion of God prompted the children to ask intriguing questions about the metaphysical. The other function that religion seemed to play was to reinforce the children's traditional and cultural links with their roots. Similarly, religion and parables were used by parents to discipline their children.

7.5.3 Stimulation Fosters Development and Impacts upon Giftedness in Pre-School Children

Parents tried to engage in stimulatory activities prior to the birth of their child. They either spoke to the child or played music, hoping that it would have calming effects on the mother, and stimulatory effects on the foetus. If nothing else, it focussed them on their baby more, made them anticipate interaction with their child and formed a basis for post-natal bonding.

The quality of attention that parents and care givers gave to the child would also seem to have an influence on the child's development. The parents indicated that in their normal daily routine, they carried and interacted with their child as a form of stimulation and mediation. However, 96% of the respondents stated that they responded promptly when the child displayed signs of stress or discomfort, not wanting to cause the child any more distress.

The extended family contributed to the attention that was offered to the child. The main activities of the extended family were to ensure the child's safety in the parents' absence and to engage the child in "reading, bathing and games". The extended family ensured that the quality of attention that the child got did not deteriorate in the parents' absence. It was expected that members of the extended family tried be "good role models" to the child.

The extended family had to complement parents in offering opportunities to the child for religious and cultural stimulation. It would seem that the parents were gripped with a sense of fear that children would loose contact with their cultural heritage and many activities that children were encouraged to participate in had religious and cultural significance. These include going to the temple or mosque, dressing in traditional Indian attire, participating in Indian song and dance ritual, watching Indian movies, and going to family gatherings and weddings.

Parents inundated children with a wide array of toys believing that these toys would provide them with "educational stimulation and pleasure." Although it may seem that parents purchased most of the toys, 44% of the respondents made toys for the children. The children formed part of the toy making process in terms of parent initiated play activities.

Although parents made and purchased gender neutral toys, they tried to develop gender identification through the "gender appropriate toys" that formed part of the child's toy collection. It was established through the interviews, which took place at the respondents homes, that the more affluent the family, the greater the variety of toys were purchased. This variety was compounded by availability and parental preference. At another level, an analysis of the toys purchased, revealed that they were the standard range of toys that are available at any toy shop or chain store.

Popular electronic equipment (cf. 7.14) that embellished a household were made available by parents to most children for use. In some instances when parents did not personally own the electronic equipment, children were still given opportunities to use them, possibly by friends and relatives. In a small minority of cases when parents owned these electronic devices they did not give children the opportunity to use them. This could be related to the high cost and complexity of the device. The

possibility that parents were not confident enough to allow children to use them or to teach them to use them, should not be ruled out.

Recreation (cf. 7.15) featured prominently as a stimulatory mechanism in which the children and parents sometimes engaged. The choice of activities that were encouraged were varied and to a great extent depended upon the needs of the family, however, all the activities implicitly carried learning and recreational components. It seems that some of the activities were structured and others were spontaneous with the hope that children would learn from them. The parents played an important role in initiating these activities whilst simultaneously encouraging participation from the child and members of the family.

Computers, TV and Electronic games have featured prominently in the lives of the children. Parents have purchased them or allowed them use of these games and toys primarily to stimulate the children intellectually. The types of activities that the children engaged in with the computer and the electronic games depended upon their skill, knowledge and sophistication. However, it seems that parents latched onto the opinion that "if their children could master the computer and electronic games they would be able to make them brighter. The role of the parents in the child's use of the computer and electronic games has primarily been one of facilitator and mediator, with the electronic games been used as tools for intellectual stimulation and development.

Parents also considered the aesthetic development of their children in terms of the interests they displayed. This is compounded by parents encouraging them to participate in activities that they considered appropriate for their children or those that are readily available in areas such as speech, drama, and dance. The parents

hoped that through aesthetic development they could also stimulate the children intellectually and sustain their interest in a pleasurable and educative activity.

7.5.4 The influence of Television and Reading on Gifted Pre-school Children

Reading is the most popular activity that all parents engaged in with their children. The parents' reading contribution was complemented by members of the immediate and extended families. Although the regularity and patterns of reading differed from family to family, parents believed this contributed to children being able to read before they went to school, and that it developed in them a desire to explore and read books. Parents revealed that a whole assortment of books comprised their private home libraries. They also indicated that they used different techniques like flash cards and dramatisation to enhance and help their children to master and enjoy the habit of reading (cf. 7.18).

Parents used television as a mechanism of reward and punishment with their children. Children were also prevented from watching too much televison. However, all the parents were convinced that watching television has had a positive impact on their children's lives by developing logical thinking and enriching their imagination. This could be attributed to the programmes watched and the continuous attempts by producers and the television channels to enrich the children's programmes with educational content in an indirect fashion.

7.5.5 Daycare and Pre-schooling

Only when both parents were in full-time employment, were daycare facilities solicited. Although the daycare mothers did not have any formal training, many mothers believed that they had skills to look after the children. None of them were certain about the nature of stimulatory activity that was dispensed by these caregivers. It would seem that the caregivers functioned only on instruction from the

mother. However, it would seem that when children were left with members of the extended family, they derived more stimulation than at a day care facility.

The children's experiences at nursery school and pre-school were considered by all of the parents to be positive. Although parents did not subject their children to an objective test concerning the benefits of pre and nursery schools, they were convinced that these benefits would stand their children in good stead for their future school experience. A cursory analysis of the array of benefits that parents considered, suggests both educational and stimulatory factors (cf. 6.22.2).

The main hypothesis that intellectual development can be promoted in pre-school children, has been supported by this research.

7.6 LIMITATIONS OF THE STUDY

Implicit in a study of this nature are certain inherent limitations. These do not invalidate the findings but indicate that the findings should be considered and understood within the limitations. The researcher was fully aware of some of the limitations at the inception of the study, while others became more explicit as the research process unfolded.

- Only one minority group was considered in South Africa for this research. More minority groups from different areas should form part of the research designs in the future.

- As Indian children from one residential area were included in the research cohort, generalisibility is limited.

- Too much of the data solicited depended upon parental involvement.

- As young children were involved, the initial identification by peers and teachers may not be too accurate.

7.7 RECOMMENDATIONS FOR FURTHER RESEARCH

- Further research should be directed at a longitudinal study monitoring progress of these children in primary and secondary schools.
- Other groups could be included in replicable studies.
- The feedback and recommendations made by the researcher to the parents needs to be evaluated and monitored.
- Each of the sub-hypotheses should be subjected to true experimental designs in minority communities.

7.8 CONCLUSION

The researcher systematically tried to identify gifted pre-school children with the instruments at his disposal, and in the process he tried to document the possible the ways in which stimulation and background interface in a group of gifted Indian pre-school children. The parental perceptions of stimulation in enriching these pre-schoolers' lives were highlighted in terms of resources and the parents' understanding of the concepts of giftedness and stimulation. It is therefore necessary when considering to enrich the lives of children to focus on the idiosyncrasies of parents, children and background.

BIBLIOGRAPHY

African National Congress 1994. A Policy Framework for Education And Training - A Discussion Document. ANC. Johannesburg.

Alexander, K.L. & Entwisle, D.R. 1988. Achievement in the first two years of school: Patterns and Processes. Monographs of the Society for Research in Child Development, 53 (2. Serial No 218).

Anderson, J., Fischgrund, S. & Lobascher, M. 1989. Right Start for School. Harlow, England: Longman House.

Ary, D., Jacobs, L.C. & Razavieh, A. 1990. Introduction to Research in Education. (4th Edition). United States of America: Harcourt Brace Jovanovich.

Atkinson, S. 1994. Help your Child with Maths. London: Hodder & Stoughton.

Atmore, E. 1993. Providing early childhood educare services for the black preschool child. In: J. le Roux (Ed), The black child in crisis: A socio-educational perspective, Volume 1.

Becher, R.M. 1986. Parent involvement: A review of research and principles of successful practice. In L.G. Katz (Ed), Current topics in early childhood education. Vol 6 (85-122), Norwood, NJ: Abelex.

Beck, J. 1986. How to Raise a Brighter Child. New York: Pocket Books.

Beckwith, L. 1984. Parent interaction with their pre-term infants and later maternal development. Early Child Development and Care, Vol 16, 27-40.

Bee, H. 1998. Lifespan Development. (2nd Edition). New York: Longman.

Berg, B.L. 1998. Qualitative Research Methods for the Social Sciences. Boston: Allyn & Bacon.

Black, J., Pickett, M., & Bell, M. 1992. The Young Child: Development from Prebirth Through Age Eight. New York: Macmillian.

Bradley, R.H. & Caldwell, B.M. 1992. Early Home Environment and Changes in Mental Test Performance in Children from 6 to 36 Months. Developmental Psychology, Vol 12 (2), 93-97.

Bruner, J. 1960. The Process of Education. Cambridge: Harvard University Press.

Bukatko, D. & Daehler, M.W. 1995. Child Development - A thematic Approach. Boston: Houghton Mifflin.

Bulmer, M. & Warwick, D.P. 1998. Social Research in Developing Countries. London. UCL: Press.

Burchinal, M., Lee, M. & Ramey, C. 1989. Type of Day Care and Pre-School Intellectual Development in Disadvantaged Children. Child Development, Vol. 60 (1), 128-137.

Burger, S. 1992. Opvoeding van die Voorskoolse kind tot optimale kognitiewe wording. Unpublished MEd thesis. Pretoria: UNISA.

Circirelli, V. G. 1978. The relationship of sibling structure to intellectual abilities and achievement. Review of Educational Research, Vol 48 (3), 365-379.

Clark, B. 1993. Growing up Gifted: Developing the Potential of Children at Home. New York: Merrill Publishing Company.

Clark, B. 1988 . Growing up Gifted. Columbus: Merrill Publishing Company.

Clark, L. 1994. Help Your Child with Reading and Writing. London: Hodder & Stoughton.

Clarke-Stewart, A., Friedman, S. & Koch, J. 1985. Child Development. A Topical Approach. New York: John Wiley.

Clarke-Stewart, A. & Koch, B.J. 1983. Child Development Through Adolescence. New York: John Wiley & Sons.

Clarke-Stewart, K.A. 1991. A Home is Not a School: The Effects of Child Care on Children's Development. Journal of Social Issues, Vol 47 (2), 105-123.

Clausen, J.A. 1986. Perspectives on childhood socialization. In J. Clausen (Ed.). Socialization and Society, Boston: Little Brown.

Cleave, S. & Brown, S. 1993. Early to School. London: Routledge.

Cochrane, D.B. & Manley-Casimir, M. 1980. Development of Moral Reasoning. Practical Approaches. New York: Praeger.

Cohen, L. & Manion, L. 1991. Research Methods In Education. (3rd Edition). London: Routledge.

Cole, M. & Cole, S.R. 1993. The Development of Children. England: Freeman & Company.

Cornell, D.G., Delcourt, M.A.B., Goldberg, M.D. & Bland L.C. 1995. Achievement and Self-Concept of Minority Students in Elementary School gifted Programs. Journal for the Education of the Gifted, Vol 18 (2), 189-209.

Craig, G.J. 1996. Human Development. New Jersey: Prentice Hall.

Curtis, A.M. 1994. A Curriculum for the Pre-school Child. London: Routledge

Dagar B.S. & Dhull, I. 1994. Perspectives in Moral Education. New Delhi: Uppal.

Davis, G.A. & Rimm, S.B. 1985. Education of the Gifted and Talented. Englewoods Cliffs, Prentice Hall.

De Lange Commission 1981. Report. (HSRC Investigation into Education: Education for Children with Special Educational Needs), Pretoria: HSRC.

Deittman, D.F. & Colangelo, N. 1980. A Functional Model for Counselling Parents of Gifted Students. Gifted Child Quarterly, 24 (4), 158-161.

Dembo, M.H. 1991. Applying Educational Psychology in the Classroom. (4th Edition). London: Longman.

Denzin, N.K. 1978. The Research Act. New York: McGraw-Hill.

Dodson, F. 1990. How to Parent. The indispensable guide to your child's formative years. New York: Signet.

Eggen, P. & Kauchak, D. 1997. Educational Psychology: Windows on Classrooms. Cocumbus, Ohio: Merrill.

Elkind, D. 1980. Jean Piaget. Six Psychological Studies. Sussex: Harvester Press.

Elkind, D.R. & Weiner, 1989. Development of the Child. New York: John Wiley.

Ellermeyer, D. 1988. Effects of Day Care Upon the Cognitive Development of the Advantaged Child: A Discussion. Early Child Development and Care, Vol 34, 287-293.

Entwisle, D. & Hayduk, L. 1988. Lasting Effects of Elementary School. Sociology of Education, Vol 61, 147-159.

Erikson, E. 1963. Childhood and Society. New York, Norton.

Erikson, E.H. 1968. Identity Youth and Crisis. New York: Norton.

Erikson, E.H. 1977. Childhood and Society. Great Britain: Triad/ Paladin.

Evans, R.I. 1973 Jean Piaget: the Man and His Ideas. New York: Dotton.

Feldhusen, J.F. 1993. Gender Differences in Classroom Interactions and Career Aspirations of Gifted Students. Contemporar Educational Psychology, Vol 18 (3), 355-362.

Feuerstein, R. 1979. The dynamic assessment of retarded performers. The learning potential assessment device, theory, instruments and techniques. Baltimore: University Park Press.

Feuerstein, R. 1980. Instrumental Enrichment - An Intervention Programme for Cognitive Modifiability. Baltimore: University Park Press.

Flavell, J. H. 1985. Cognitive Development. Englewood Cliffs: Prentice-Hall.

Fontana, D. 1995. Psychology for Teachers. (3rd Edition). London: Macmillian.

Friedman, S.L. & Sigman, M. (Eds.) 1980. Preterm birth and Psychological Development. New York: Academic Press.

Gage, N.L. & Berliner, D.C. 1991. Educational Psychology. (5th Edition). Boston: Houghton Mifflin.

Gagné, F. 1994. Are teachers Really Poor Talent Detectors? Comments on Pegnato and Birch's (1959) Study of the Effectiveness and Efficiency of Various Identification Techniques. Gifted Child Quarterly, 38 (3), 124-126.

Gagné, R. 1977. The Conditions of Learning. (3rd Edition). New York: Holt, Rinehart and Winston.

Gallagher, J. 1988. Our love hate affair with gifted children. Gifted Child Today, 11, 55-55.

Gerdes, L.C. 1988. The Developing Adult. (2nd Edition). Durban: Butterworths.

Gesell, A., Ilg, F. & L.B. Ames. 1995. Infant and Child in the Culture of Today. London: Jason Aronson.

Ginsberg, H. & Opper, S. 1988. Piaget's theory of intellectual development. (3rd Edition). Englewood Cliffs: Prentice-Hall.

Good, T.L. & Brophy, J.E. 1990. Educational Psychology. A Realistic Approach. London: Longman.

Gottfried, A.E., Fleming, J.S. & Gottfried, A.W. 1994. Role of Parental Motivational Practices in Children's Academic Intrinsic Motivation and Achievement. Journal of Educational Psychology, Vol 86 (1), 104-113.

Haasbroek, J.B. 1988. Education for gifted pupils. Pretoria: Human Sciences Research Council.

Hackney, H. 1981. The gifted child, the family and the school. Gifted Child Quarterly, Vol 25, 51-54.

Hallahan, D.P. & Kauffman, J.M. 1994. Exceptional Children: An Introduction to Special Education. Boston: Allyn & Bacon.

Hamachek, D. 1995. Psychology in Teaching, Learning and Growth. (5th Edition). Boston: Allyn & Bacon.

Hayes. N. 1994. Foundations of Psychology. An Introductory Text. London: Routledge.

Hoge, R.D. & Cudmore, L. 1986. The use of teacher - judgement measures in the identification of gifted pupils. Teaching and Teacher Education , 2, 181-196.

Horowitz, D.F. & O'Brien, M. 1985. The Gifted and Talented: Developmental Perspectives. Washington: American Psychological Association.

Hunter, F.T., McCarthy, R.H., MacTurk, R.H. & Vietze, P.M. 1987. Infants' Social-Constructive Interactions with Mothers and Fathers. Developmental Psychology, 23 (2), 249-254.

Johnson, D. 1994. Research Methods in Educatiional Management. University of Leicester Harlow Longman Educational Management Development Unit.

Jolley, J.M. & Mitchell, M. L. 1996. Lifespan Development. A Topical Approach. Pennsylvania: Brown & Benchmark.

Kelly, C. 1996. Early Literacy: Early Childhood Education - A Developmental Perspective. Editors G.M. Bvelkin, A.V. Kelly. London: Paul Chapman: 133-149.

Kendall, F. 1990. Super Parents Super Children: How to Raise Happy, Independent and Confident Children. Johannesburg: Delta Books.

Kirk, S.A., Gallagher, J.J. & Anastasiow, N.J. 1993. Educating exceptional children. (7th Edition). Boston: Houghton Mifflin.

Knight, G.P. 1982. Cooperative-competitive social orientation: Interaction of birth order with sex and economic class. Child Development, Vol 53, 664-667.

Kohlberg, L. 1981. The Philosophy of Moral Development. San Francisco: Harper & Row.

Kohlberg, L. 1984. The Psychology of Moral Development: The Nature and Validity of Moral Stages. (1st Edition). San Francisco: Harper & Row.

Kokot, S. J. 1992. Understanding Giftedness. Durban: Butterworths.

Langeveld, M.J. 1969. Beknopte theoretische pedagogiek. Groningen: Wolters-Noordhoff.

Lay-Dopyera, M. & Dopyera J. 1990. Becoming a Teacher of Young Children. New York: Mcgraw-Hill.

Leach, P. 1994. Children First. What society must do and is not doing for children today. London: Penguin.

Lindon, J. & Lindon, L. 1993. Your child from 5-11. London: Hodder & Stoughton.

Lobel, T.E. & Bempechat, J. 1992. Socialization of Achievement: Influence of Mothers' Need for Approval on Children's Achievement, Cognitions and Behaviour. Journal of Educational Psychology, Vol 48 (4), 529-536.

Louw, D.A., van Ede, D.M. & Louw, A.E. 1998. Human Development. (2nd Edition). Pretoria: Kagiso.

Ludington-Hoe, S.M. 1988. Case Study in infant stimulation: Lessons from newborn and parent. Early Child Development and Care, Vol 36, 1-24.

Macoby, E.E. & Martin, J.A. 1983. Socialization in the context of the family: Parent child interaction. In: P.H. Mussen (Ed), Handbook of Childhood Psychology, (4th Edition), Vol 4, 1-101, New York: Wiley.

Madge, E.M. 1981. Manual for the Junior South African Individual Scales (JSAIS) - Part 1 Development and Standardization. Pretoria: Human Sciences Research Council.

Maier, H.W. 1969. Three Theories of Child Development. New York: Harper International.

Marzollo, J. & Lloyd, J. 1996. Learning through Play. London: Unwin.

May, T. 1997. Social Research. Issues, Methods and Process. (2nd Edition). Buckingham: Open University Press.

McCartney, K., Scarr, S., Phillips, D., Grajek, S. & Schwartz, J.C. 1982. Environmental differences among day-care centres and their effects on children's environment. In: E. Zigler & E.W. Gordon (Eds). Day care: scientific and social policy issues. (pp. 126-151). Boston, MA: Auburn House.

McCown, R., Driscoll, M. & Roop, P.G. 1996. Educational Psychology. Boston: Allyn & Bacon.

McIntosch, S. 1995. Serving the Undeserved: Giftedness Among Ethnic Minority and Disadvantaged Students. School Administrator, Vol 52 (4), 25-29.

McMillian, J.H. & Schumacher, S. 1993. Research in Education. A Conceptual Introduction. (3rd Edition). New York: Harper Collins.

Mohanty, J. & Mohanty, J. 1994. Early Childhood Care and Education. New Delhi: Deep and Deep Publications.

Moon, S.M. 1995. The Effects of an Enrichment Program on the families of Participants: A Multiple-Case Study. Gifted Child Quarterly, Vol 39 (4), 198-208.

Munsey, B. 1980. Moral Development, Moral Education and Kohlberg. Basic Issues in Philosophy, Psychology, Religion, and Education. Birmingham: Religous Educaton Press.

Mussen, P.H., Conger, J.J., Kagan, J. & Huston, C.A. 1984. Child Development and Personality. New York: Harper & Row.

Mwamwenda, T.S. 1995. Educational Psychology. An African Perspective. (2nd Edition). Durban: Butterworths.

National Education Policy Investigation 1992. (Working Papers). Cape Township: NEPI.

Olenchak, F.R. 1995. Effects of Enrichment on Gifted / Learning-Disabled Students, Vol 18 (4), 385 -399.

Oppenheim, A.N. 1966. Questionnaire Design and Attitude Measurement. London: Heinemann.

Orr, J.P. 1992. Learning through Play. In: The Day Care Handbook. Pretoria: Femina.

Owen, K. & Taljaard, J.J. 1989. Handbook for the use of Psychological and Scholastic Tests of IPER and the NIPR. Pretoria. Human Sciences Research Council.

Papilia, D.E. & Olds, S.W. 1992. A Child's World: Infancy through Adolescence. (5th edition). New York: McGraw-Hill.

Pasnak, R. 1987. Acceleration of Cognitive Development of Kindergartners. Psychology in the Schools, Vol 24, 358-363.

Penney, S. & Wilgosh, L. 1995. Parenting a Child with Special Abilities. International Journal of Special Education. Vol 10 (2), 1-10.

Phillips, D. 1987. Socialization of perceived academic competence among highly competent children. Child Development, 58, 1308 - 1320.

Phillips, J.L. 1981. Piaget's Theory: A Primer. United States of America: Freeman & Company.

Piaget, J. 1952. The Origins of Intelligence in Children. New York: International Universities Press.

Piaget, J. & Inhelder, B. 1969. The Psychology of the Child. London: Routledge & Kegan Paul.

Presser, J. 1990. Inspiring Parenthood. New York: Ballantine.

Pressley, M. & McCormick C.B. 1995. Cognition, Teaching and Assessment. New York: Harper Collins.

Quisenberry N.L. 1982. The Relationship of Infant Stimulation to Cognitive Development. Childhood Education, March-April 1982, Vol 58 (4), 247-252.

Rimm, S.B. & Davis, G.A. 1985. Education of the Gifted and Talented. Englewood Cliffs: Prentice-Hall.

Rubenstein, J. & Howes, C. 1979. Caregiving and infant behaviour in day care and in homes. Developmental Psychology, Vol 15, 1-24.

Rubin, H.J. & Rubin, I.S. 1995. Qualitative Interviewing. The Art of Hearing Data. London: Sage.

Santrock, J.W. 1995. Life-Span Development. Madison: Brown & Benchmark.

Schweinhart, L.J. & Weikart, D.P. 1989. The High/Scope Perry preschool study, similar studies, and their implications for public policy in the US. In: D. Stegelin, Early childhood Education: policy issues for the 1990s.

Segal, M. & Storey, R.M.. 1985. Day care and children's conceptions of moral and social rules. Child Development, 56, 1001-1008.

Seifert, K.L. & Hoffnung, R.J. 1991. Child and Adolescent Development. Boston: Houton Mifflin.

Shaffer, D.R. 1989. Developmental Psychology. Childhood and Adolescence. California: Brooks/Cole.

Shaffer, D.R. 1994. Social & Personality Development. California: Brooks/Cole.

Shaw, C. 1993. Talking and your Child. London: Hodder & Stoughton.

Siaan, G. & Ugwuegbu, D.C.E. 1985. Educational Psychology in a Changing World. London: Unwin Hyman.

Simon, A. 1986. Field Research Procedures and Techniques for the Social Sciences and Education. Johannesburg: University of the Witwatersrand.

Simon, S. 1989. 101 Amusing ways to develop your Child's Thinking and Creativity. Los Angeles: Lowell House.

Singh, A.K. 1989. Parental Involvement. FIAT LUX. Vol 24 (4), 22-24.

Singleton, R.A., Straits,B.C. & Straits , M.M. 1993. Approaches to Social Research. New York. Oxford University Press.

Slavin, R.E. 1991. Educational Psychology. Theory into Practice. Englewood Cliffs: Prentice-Hall.

Smart, M.S. & Smart, R.C. 1989. Children: Development and Relationships. (4th Edition). New York: Collier Macmillian.

Smith, E.A. 1994. Educating the Under-Fives. London: Cassell.

Smith, G.J. 1995. Research. Guidelines for planning and documentation. Halfway House: Southern Books.

Sonnenschein, S., Baker, L. & Cerro, L.C. 1992. Mother's Views on Teaching their Pre-schoolers in Everyday Situations. Early Education and Development, 3 (1), 5-26.

Spodek, B., Saracho, O.N, & Davis, M.D. 1991. Foundations of early childhood education: teaching three-, four-, and five-year-old children. Englewood Cliffs: Prentice Hall.

Spodek, B. & Saracho, O.N, 1991. Issues in early childhood curriculum. New York Teachers College Press.

Spodek, B. 1993. Handbook of Research in Early Childhood Education. New York: Free Press.

Sprinthall, A.N. & Sprinthall, R.C. 1990. Educational Psychology. New York: Mc-Graw-Hill.

Stoppard, M. 1993. Know your Child: How to discover and enhance your child's true potential. Cape Town: Struik.

Tuckman, B.W.1991. Educational Psychology. From Theory to Application. Philadelphia:Harcourt Brace Jovanovich.

Van den Berg, A.R. 1985. Using the Junior South African Individual Scales (JSAIS) (1981) for testees from South African population groups which were not included in the norm population. Pretoria: Human Sciences Research Council.

Van Doorninck, W.J., Caldwell, B.M., Wright, C. & Frankenburg, W.K. 1981. The Relationship between Twelve-Month Home Stimulation and School Achievement. Child Development, Vol 52 (3), 1080-1083.

Vockell, E.L. & Asher, J.W. 1995. Educational Research. Englewood Cliffs. Merrill, Prentice Hall.

Vygotsky, L. S. 1978. Interaction between learning and development. In: M. Cole, S. Scribner, V. John-Steiner, and E. Sonberman (Eds). Mind in Society: development of higher psychological processes. Cambridge, MA: Harvard University Press.

Wakefield, J. F. 1996. Educational Psychology: Learning to be a Problem Solver. Boston: Houghton Mifflin.

Walberg, H.J. 1993. Education for Eminence. The Gifted Child Today, 16 (4), 28-32.

Walberg, H.J. & Majoribanks, K. 1976. Family environment and cognitive development: Twelve analytic models. Review of Educational Research, 46 (4), 527-551.

Weikart, D.P. & Schweinhart, L.J. 1987. The High/Scope cognitively oriented curriculum in early education. In: J.L. Roopnarine. J.L. & J.E Johnson (Eds), Approaches to Early Childhood Education.

Wortham, S.C. 1995. Measurement and Evaluation in Early Childhood Education. Engelwood Cliffs: Merrill Prentice Hall.

APPENDIX 1

QUESTIONNAIRE

1. BIOGRAPHICAL DETAILS OF CHILD

Name . . . . . .

Date of birth . . . . . .

Age . . . . . .

School . . . . . .

2. BIOGRAPHICAL DETAILS OF PARENTS

	FATHER	MOTHER
Qualification(s)		
Occupation		

Does dad work? Yes No Does mom work? Yes No

Marital status . . . . . .

No. of children in the family

Boys ..... Ages .....

Girls ..... Ages .....

Child's status in family . . . . . .

Religion . . . . . .

3. PRE-NATAL FACTORS

Own child Adopted Planned

Did you do anything special / out of the ordinary for the child before the child was born?

Yes ☐
No ☐

If yes, please describe what you did.

. . . . . .

. . . . . .

4. PREGNANCY

Normal	Small problems	Problematic

If problematic, what type of problem was it?

Emotional ☐
Physical trauma, e.g. accident ☐
Threatened miscarriage ☐
Sickness ☐

Other . . . . . .

What tests and treatment did you undergo during pregnancy?

X-rays (how long?) . . . . . .

Special diet (How long?) . . . . . .

Medication (Specify) . . . . . .

. . . . . .

5. BIRTH HISTORY

Type of birth

Natural	Caesarian Section

In the event of natural birth, was there any special procedure used during birth?

Yes ☐
No ☐

If yes, what were the procedures? . . . . . .

Induction ☐
Instruments ☐
Medication ☐
Other ☐

What was the baby's constitution immediately after birth?

. . . . . .

Did the baby cry immediately? Yes ☐ No ☐
Was the baby yellow? Yes ☐ No ☐
Was the baby blue? Yes ☐ No ☐
Did the baby receive a blood transfusion? Yes ☐ No ☐

Were there any innate abnormalities? (Specify) . . . . . .

. . . . . .

. . . . . .

. . . . . .

6. POST-NATAL DEVELOPMENT

FEEDING:

Any sucking or swallowing problems? Yes ☐ No ☐

Did you breastfeed your baby? Yes ☐ No ☐

If, yes, how long? . . . . . .

Less than a month ☐
1 - 3 months ☐
4 - 6 months ☐

7 - 18 months ☐
More than 18 months ☐

Did the baby suffer from any allergies? Specify

. . . . . .

. . . . . .

Did the baby follow a special diet? Specify

. . . . . .

. . . . . .

7. MOTOR DEVELOPMENT

When did your child roll over without support? . . . . . .

When did your child sit with support? . . . . . .

At how many months did your child begin crawling? . . . . . .

When did he/she stand unaided? . . . . . .

At what age did he/she begin walking? . . . . . .

In comparison with other children. how would describe your child's bodily development?

. . . . . .

. . . . . .

8. MORAL DEVELOPMENT

How has religion influenced the way you have brought up your child?

. . . . . .

. . . . . .

Do you worship as a family together ? Yes No

How have you incorporated the teaching of your scriptures into your child's daily activities?

. . . . . .

. . . . . .

. . . . . .

If your child steals/lies, how do you reprimand him/her? . . . . . .

. . . . . .

. . . . . .

. . . . . .

How would you describe your child's behaviour in comparison with other children?

. . . . . .

. . . . . .

. . . . . .

. . . . . .

Has your child asked you enquiring/intriguing questions about the existence of God?

Yes ☐
No ☐

How did your respond to the child? . . . . . .

. . . . . .

. . . . . .

9. SOCIAL DEVELOPMENT

Would you describe your child as being sociable? Yes No

Does he have many friends? Yes No

Describe what they do together . . . . . .

. . . . . .

. . . . . .

Does he/she have friends from different races? Yes No

Does he/she have friends from different religious backgrounds?

Yes ☐
No ☐

Do you encourage interaction? Yes No

Does he/she visit friends? Yes No

Do friends visit him/her? Yes No

10. SPEECH AND LANGUAGE DEVELOPMENT

Did the child babble much? Yes No

How did the mother/father react to this? . . . . . .

. . . . . .

. . . . . .

Did the mother/father talk much to the child? Specify . . . . . .

. . . . . .

. . . . . .

How did the mother/father expand the child's vocabulary? Specify . . . . . .

. . . . . .

. . . . . .

11. ATTENTION TO THE YOUNG CHILD

Did the child spend long hours in the cot awake? Yes ☐ No ☐

Did the mother/father go to the child immediately when it cried or did she leave it to cry for some time?

. . . . . .

Was the child carried around much as a baby by the mother/father or other members of the family? . . . . . .

. . . . . .

Where was the child taken with the family as a baby? . . . . . .

. . . . . .

. . . . . .

Did the mother/father attract the child's attention to things in its surroundings?

Yes ☐
No ☐

Did the child ask many questions? Yes ☐ No ☐

What type of questions did the child ask? . . . . . .

. . . . . .

. . . . . .

How did the parents handle these questions? EXAMPLE:

Merely give answers ☐
Detailed explanation ☐
Encourage further questions ☐
Give the child a chance to answer ☐
Find out how the child derived the answer ☐
Encourage the child to think of alternatives ☐
When the child had to solve a problem - did the

parents help him in planning; monitoring his progress; and evaluating the outcome?

Yes ☐
No ☐

What input did the educator provide in respect to play? (initiate? , take over?, accomplice? .....)

. . . . . .

. . . . . .

Did the child make use of a carry chair? Yes No

How often? . . . . . .

Why? . . . . . .

. . . . . .

How did the educator handle the child's - exploration? (make the house child-proof?, grant free access to kitchen cupboards or garden? . . . . . .

. . . . . .

. . . . . .

Do the parents provide opportunities for cultural and intellectual discovery?

Yes ☐
No ☐

Describe these opportunities . . . . . .

. . . . . .

. . . . . .

. . . . . .

12. PARENTS

What different roles do you, as "dad and mom," play in the bringing up of your child(ren)?

. . . . . .

. . . . . .

Who has been left with the responsibility of disciplining the child? . . . . . .

. . . . . .

How do you discipline the child(ren) at home? . . . . . .

. . . . . .

Do you think the extended family has, in anyway, assisted you in bringing up your child(ren)?

Yes ☐
No ☐

Describe the ways in which this took place. . . . . .

. . . . . .

. . . . . .

. . . . . .

. . . . . .

How have you been able to teach your child to cope with racist and sexist behaviours? . .

. . . . . .

. . . . . .

. . . . . .

. . . . . .

13. INTEREST IN TOYS AND PLAY ACTIVITIES

What kinds of toys does your child show a preference for? . . . . . .

. . . . . .

When did your child begin this? . . . . . .

What kinds of toys have you bought for your for your child?

Toys	Age	Why

Who helped to choose the toys that your child likes/ liked? . . . . . .

. . . . . .

Did you ever make any toys for your child at home? Yes No

If yes, describe the toys . . . . . .

. . . . . .

. . . . . .

Describe how your child handles his/her toys . . . . . .

. . . . . .

14. TECHNOLOGY

Do you have the following at home? (Has your child ever had an opportunity to use or operate them?)

	Items		**Opportunity to Use**	
Radio	Yes	No	Yes	No
TV	Yes	No	Yes	No
Video Recorder	Yes	No	Yes	No
Microwave oven	Yes	No	Yes	No
Camera	Yes	No	Yes	No
Video camera	Yes	No	Yes	No
Telephone	Yes	No	Yes	No
Computer	Yes	No	Yes	No

Please indicate whether you have ever done the following with your child? (and how many times have you done this in the child's life?)

15. RECREATION

Gone to the movies	Yes	No
Visited the zoo	Yes	No
Gone for a picnic	Yes	No

Visited the library Yes No .....

Gone to the museum Yes No .....

Gone on holiday Yes No .....

Had a birthday party Yes No .....

Visited the fun fair Yes No .....

Taken your child to your place of work Yes No .....

Visited a factory Yes No .....

Gone to a farm Yes No .....

Gone to the beach Yes No .....

16. COMPUTERS

Do you have a computer at home? Yes No

Is your child allowed to use it? Yes No

If so, what does she/he do with the computer? .....

.....

What programmes do you have loaded?

.....

Have you sent your child for computer enrichment to Future Kids/ K-net , etc.? (specify)

. . . . . .

. . . . . .

How do you think this has helped your child? . . . . . .

. . . . . .

. . . . . .

What other electronic toys/games have you bought for your child?

. . . . . .

. . . . . .

17. CREATIVE PLAY

Does your child show any special interest in art/museum, dance/drama, etc? (Please feel free to describe the activity.

. . . . . .

. . . . . .

Have you shown any enthusiasm in your child's interest? . . . . . .

. . . . . .

What have you done to develop the child's interest in that particular area?

. . . . . .

In what ways have you exposed your child to other art forms for which you think he has a flair ?

. . . . . .

. . . . . .

How have you promoted your child's interest in developing a hobby? . . . . . .

. . . . . .

. . . . . .

Have you ever explored with your child any possible career choices?

Yes ☐
No ☐

What possible careers would your child like to follow and why?

CAREER	REASON

18. TELEVISION AND ENCYCLOPAEDIAS

How long does your child watch television daily? . . . . . .

What programmes have your encouraged your child(ren) to watch?

. . . . . .

. . . . . .

Have you ever used the TV as a substitute for not spending time with your child?

Yes ☐
No ☐

Have you ever sanctioned your child for watching TV? Yes ☐ No ☐

What types of films have you hired for your child to watch at home?

. . . . . .

. . . . . .

. . . . . .

If your child has shown a preference for a particular type of film, what did you do about this preference?

. . . . . .

. . . . . .

Do you think TV has had a positive or negative effect on your child's development/growth? (Please elaborate)

. . . . . .

. . . . . .

. . . . . .

In what ways do you think your child has benefitted from TV watching?

. . . . . .

. . . . . .

Do you have a set of encyclopaedias at home? Yes No

If yes, which set ? . . . . . .

Did you ever use it or refer to it with your child? Yes No

When you bought this encyclopaedia set, what benefits did you think it would have for your child?

. . . . . .

. . . . . .

19. READING

Does the child page through storybooks/magazines with you?

Yes ☐
No ☐

At what age could he follow stories? . . . . . .

Do you have any special input during story-telling, e.g. mother begins a story and the child continues? . . . . . .

. . . . . .

Could the child read before he went to school? Yes No

How do you feel about the child learning to read before going to school?

. . . . . .

. . . . . .

What types of books do you have at home? Explain.

. . . . . .

. . . . . .

. . . . . .

How often do you read to your child? . . . . . .

Have you ever sat down with your child and explored through the pages of the book by discussing the pictures with your child?

Yes ☐
No ☐

Over time has your child developed a love for books? Yes No

Have you had to re-read certain books for the child repeatedly? Yes No

Have you read to the child as a family? Yes No

Whose reading did the child enjoy? .....

.....

Did the child portray independent self-interest in learning to read?

Yes ☐
No ☐

In what ways have you encouraged the child to develop the reading habit?

.....

.....

20. DAYCARE

Do both parents work? Yes No

How soon after the birth of this child did you return to work?

.....

In your absence who cares for the child? .....

Does the person have any special skill or expertise to look after children?

Yes ☐
No ☐

Describe this skill. .....

.....

What instructions do you leave with the childcare minder for the stimulation of your child?

.....

.....

How have you used the family to support you with the care of your child?

21. PRE-SCHOOL

Have you sent your child to pre-school? Yes No

Have you sent your child to nursery school? Yes No

How long has your child spent at the pre-school and at the nursery school combined?

Why did you send your child to pre-school?

Do you think pre-schooling has benefitted your child in any way?

Yes ☐
No ☐

Describe the benefits

22. SUMMARY

Can you please describe in detail all the things you have said to your child or done with your child, thinking that these would promote his specific talents?

. . . . . .

. . . . . .

. . . . . .

. . . . . .

. . . . . .

. . . . . .

. . . . . .

APPENDIX 2

STRUCTURED OBSERVATION BY TEACHING STAFF: IDENTIFICATION OF POSSIBLY GIFTED PRE-PRIMARY PUPILS BY MEANS OF A CHECKLIST

This has been taken from Haasbroek (1988)

Pupil: _____ Date of birth: _____

School: _____ Date: _____

Name of parent _____

Address: _____

Birth order: _____

Attendance at pre-primary school:

Six months _____

One year _____

Two years _____

More than two years _____

		YES	NO
1.	Keenly interested in his environment, objects, topical issues, is inquisitive and keen to find out about things	.....	.....
2.	Has a very good memory, for example, for stories, detail, figures	.....	.....
3.	Learns easily and quickly	.....	.....

		YES	NO
4.	Tries to find answers and solutions to problems on his own	.....	.....
5.	Develops more quickly and reaches certain levels of development sooner than other members of his peer group	.....	.....
6.	Tends to take over leadership of the peer group	.....	.....
7.	Usually occupies himself with one or more of his interests	.....	.....
8.	Is an intense and keen observer. Observes more in, for example, stories and films, than other members of the peer group do	.....	.....
9.	Is original and puts own thoughts and ideas into practice	.....	.....
10.	Is sensitive to aesthetic things.	.....	.....
11.	Is adventurous and speculative.	.....	.....
12.	Shows exceptional skill/interest in all sorts of art forms such as painting, drawing, modelling/ handicrafts, music and drama.	.....	.....
13.	Has exceptional linguistic ability and oral expressive ability.	.....	.....
14.	Already recognises some written words, or is even able to read.	.....	.....

15.	Has a very long span of attention/good powers of concentration.	.....	.....
16.	Understands numbers very well.	.....	.....
17.	Understands similarities and differences between things and draws comparisons.	.....	.....
		YES	**NO**
18.	Has the special ability to plan and organise activities.	.....	.....
19.	Asks difficult questions, for example, about death, justice, eternity and the values of life.	.....	.....
20.	Is alert, observant and reacts quickly.	.....	.....
21.	Displays exceptional mechanical interests and skills.	.....	.....
22.	Displays exceptional muscular co-ordination and physical skill, for example, in dancing, ball games, running and swimming.	.....	.....
23.	Is a dreamer who comes up with surprising ideas, solutions, thoughts and skills.	.....	.....
24.	Is a perfectionist and is critical.	.....	.....
25.	Converses intelligently with older children and adults.	.....	.....

1. Multiply the total number of YES answers by 4.

2. Compare the calculated total with the following scale:

80 +	Almost certainly a gifted pupil: Should be assessed further.
70-80	Giftedness is a strong possibility: Should be assessed further.
60-70	Giftedness is a reasonable possibility: Should be assessed further.
50-60	Giftedness is a possibility: Should be watched.
-50	Slight possibility of giftedness.

3. Specific giftedness

(i)	Language:	1, 2, 3, 5, 8, 13, 14, 19, 20, 25.
(ii)	Mathematics:	3, 5, 7, 15, 16, 17, 21, 24.
(iii)	Art:	10, 12.
(iv)	Mechanical:	7, 9, 21.
(v)	Physical:	18, 21, 22.
(vi)	Creative:	4, 5, 8, 9, 11, 12, 18, 20, 23, 25.

TEACHING STAFF'S RATING OF PUPIL

After careful consideration the pupil is *RATED/NOT RATED AS POSSIBLY GIFTED.

Teacher's signature _____ Date: _____

---

* Delete whichever does not apply.

APPENDIX 3A

STRUCTURED OBSERVATION BY PEER GROUP: NOMINATION OF POSSIBLY GIFTED PUPILS BY MEANS OF A CHECKLIST

This has been taken from Haasbroek (1988).

Answer the following questions as carefully and as honestly as possible:

1. If you had to form a group to help you carry out an extremely difficult task or project, which of your classmates would you choose?
   (a) ..... (b) ..... (c) .....
   (d) ..... (e) ..... (f) .....

2. In your opinion, which of your classmates are the cleverest?
   (a) ..... (b) .....

3. In your opinion, which of your classmates are quickest at understanding schoolwork?
   (a) ..... (b) .....

4. Which of your classmates would you choose to help you with a Mathematics or a Science problem?
   (a) ..... (b) .....

5. Which of your classmates hardly ever have problems with Mathematics or Science?

(a) ..... (b) .....

6. Which of your classmates learn concepts more quickly than most of the others in the class, are able to remember the details of a particular task and can explain these to you so that you can understand?

(a) ..... (b) .....

7. Which of your classmates have a variety of new, original ideas? In the classroom they come up with the most unusual ideas, with the result that you are deeply impressed by the unusual way in which their minds work. These classmatess can aptly sum up the different views of several pupils.

(a) ..... (b) .....

8. Which of your classmates usually take the lead when tasks and assignments have to be carried out?

(a) ..... (b) .....

9. Say a group of you were to be faced with a particularly difficult problem, who would you vote for to act as leader of the group?

(a) ..... (b) .....

10. Which of your classmates display a good sense of fairness? In the classroom such pupils are looked up to when it comes to settling differences between pupils and they therefore help to teach others what the difference between right and wrong is. Consequently they are respected by others.

(a) ..... (b) .....

11. Which of your classmates are born leaders? These pupils know how to organise matters in order to achieve something. They often take charge of situations. Other pupils usually seek their guidance when anything has to be tackled.
(a) ..... (b) .....

12. In your opinion, which of your classmates write the best essays?
(a) ..... (b) .....

13. In your opinion, which of your classmates can express a matter or a point of view, best or make the best speech?
(a) ..... (b).....

14. In your opinion, which of your classmates have the best aptitude for music, singing, ballet, painting and sculpture?
(a).....(b).....

15. In your opinion, which of your classmates outshine everyone else at sport?
(a) ..... (b) .....

16. Which of your classmates have the best sense of humour?
(a) ..... (b) .....

APPENDIX 3B

AMENDED STRUCTURED OBSERVATION BY PEER GROUP: NOMINATION OF POSSIBLY GIFTED PUPILS BY MEANS OF A CHECKLIST

1. If you had to form a group to carry out a difficult project, which of the children in class would you choose?

   (a) ..... (b) ..... (c) .....

   (d) ..... (e) ..... (f) .....

2. Who do you think is the cleverest in the class?

   (a) ..... (b) .....

3. Which of your classmates are quickest at understanding schoolwork?

   (a) ..... (b) .....

APPENDIX 4

(Synopsis of the JSAIS Test Manual)

CONTENT, AIM AND RATIONALE OF EACH TEST

1. GENERAL

The following considerations were borne in mind during the selection of the types of tests for each cell of the model:

(a) A reasonably complete coverage of those intellectual skills essential for progress in the first year of primary school;
(b) the diagnostic and clinical value of tests as evident in the relevant literature;
(c) the suitability and attractiveness of the test material for children of this age group;
(d) objectivity in scoring.

The tests consists of various types of mental tasks similar to those in the Old Individual Scale (the Fick Scale) and the SSAIS. These tests are generally accepted as operationally defining different components of intelligence. Thus, variance in performance is usually attributable to individual differences in mental ability rather than to sensory or motor capacities as such (cf. Jensen 1979:17).

One added advantage of the JSAIS is that the intellectual tasks have been divided into 22 relatively homogeneous groups. Each group of items possesses sufficient specificity to justify the use of each test on its own as well as the interpretation of a test's unique contribution to the overall score in assessing a child's strong and weak points.

In the following paragraphs each test is discussed in terms of the following factors:

(a) The content of the test;

(b) the aim of the test (in other words which construct it is supposed to measure); and

(c) the rationale (containing an operational definition of the construct) as well as basic assumptions and reasons for the selection of that particular test.

Although the diagnostic and clinical usefulness of test scores still have to be verified, a number of interpretative hypotheses based on reports in the relevant literature are presented.

2. SEPARATE TESTS

2.1 Form Board

(a) Content

This test is similar to the Form Board subtest of the SSAIS (1964). It comprises 11 items consisting of various geometric shapes (circle, square, parallelogram, etc.) cut about 3 mm into a wooden board. Each shape can be filled by two to four separate pieces. The testee is asked to fit the separate pieces into the various shapes on the board. Unlike the procedure in the Casuist type of form board, the testee is given only the pieces of one shape at a time. There is a time limit for each item and time is also taken into account in the scoring.

(b) Aim

This test is intended to measure meaningful perception of forms (cognition of figural systems and figural transformations). It involves the following more specific processes and functions: recognition; comprehension of part-whole relationships; comprehension of the position and arrangement of geometric visual

figures in space; form discrimination; visual organizational ability; and psychomotor dexterity.

(c) Rationale

The task requires the testee to identify the parts with the complete figure. The underlying assumption therefore is that the synthesis of parts into an organized, integrated whole constitutes a significant facet of concept attainment in the visual-spatial field. According to Meeker and Shadduck (no date) and Guilford (1967) Form Board Tests are the most suitable types of tests to measure the cognition of figural systems and figural transformations.

An important consideration in the selection of a form board test to measure this particular construct is that this type of test readily lends itself to an observation of a child's work habits and of temperament factors that play a role in the solution of concrete problems. A child who despairs easily and/or who is unmotivated, or a child who rigidly persists in fitting the pieces in the wrong way should be easily identified when this test is administered. The tester will also be able to observe a child's reactions to his own (the child's) mistakes.

Since 1866, form boards have been utilized in the non-verbal assessment of intelligence (cf. Anastasi 1961:241) and since then most performance scales have included a form board type of test (e.g. Arthur Point Scale of Performance Tests, 1925-1947 and Leiter International Performance Scale, 1936-1952).

2.2 Vocabulary

(a) Content

This test consists of two cards with a number of coloured pictures on each and 34

black-and-white cards with four pictures on each. The testee must choose the picture that goes best with an object, action, quality, characteristic, etc. named by the tester. This test is similar to the traditional picture vocabulary tests for children.

(b) Aim

This test is intended to measure the recognition, comprehension, identification and interpretation of verbal symbols (words) - that is basic receptive vocabulary (cognition of semantic units). It involves *inter alia* the following more specific processes and functions: retrieval of associations or general information from memory; the eduction of identities or similarities between a verbal stimulus and a picture stimulus; the differentiation of different parts of a visual stimulus; the reinterpretation of a possible ambiguous item.

(c) Rationale

This test is based on the assumption that a testee's comprehension of a word can be determined by the identification of a pictorial representation of the word (cf. Van Alstyne 1961:4). In this way the child demonstrates his ability to understand the spoken language of other people (which precedes active language usage). Considerable empirical proof exists for the validity of using picture vocabulary tests to measure general intelligence. Similar tests (e.g. the Peabody Picture Vocabulary Test, PPVT) are often used to briefly obtain a rough indication of intelligence. The corresponding test in the SSAIS showed a higher correlation than any of the other subtests with both scholastic achievement and the NSAGT IQ for all ages from 6 to 17 years. According to Blatt and Allison (1968) a vocabulary test is also relatively resistant to neurological deficit and psychological disturbance.

2.3 Ready Knowledge

(a) Content

This test consists of 28 fairly simple questions put by the tester (e.g. "*Can you touch the sun? Why not?*"). This is the first test of the GIQ Scale demanding a vocal response from the testee. The questions are such that the spontaneous interest of a child in his environment rather than knowledge acquired in formal learning situations constitutes the main factor in answering the questions correctly.

(b) Aim

This test is intended to measure the extent of a child's general knowledge concerning facts essential for adequate functioning inside as well as outside the school. The following more specific processes and functions probably play a role in the test performance: retrieval of associations or general knowledge from long-term memory, productive language ability, reality orientation, inductive reasoning ability.

(c) Rationale

The test is based primarily on the assumption that, when a child answers questions, he demonstrates his ability to acquire concepts by means of experience and learning as well as his ability to use the information at his disposal to solve a particular problem.

A second assumption is that the knowledge which a child acquires from experience and which he can retain and apply, is useful not only for his present functioning but also for the acquisition of further, more advanced knowledge and as a basis for interpersonal communication.

A third assumption is that intelligence is reflected in the way in which a child explores his world. The child who is actively involved in his world will be better informed, will be able to make better use of information which he has acquired and will act more intelligently than the child who merely experienced his world in a passive manner. This implies that a child's achievement in the Ready Knowledge Test would also reflect his particular interests and the richness of his early environment.

According to Guilford (1967) the type of test he calls *Pertinent Questions* (with questions similar to those of the Ready Knowledge Test), is the best type of test to measure cognition of semantic implications (CMI). Meeker and Shadduck (no date) use similar questions to develop practical skills in respect of this construct (CMI).

2.4 Number and Quantity Concepts

(a) Content

This test consists of two parts, namely Part A and Part B. On most of the 31 items in Part A the child may point to a picture on a card to indicate his answer. Six questions test the child's ability to count (sometimes a verbal answer is required), 16 questions concern quantity concepts (quantity, fullness, length, mass, etc.) and nine questions deal with simple concrete calculations (add, subtract, divide) and simple fractions.

Part B comprises 15 mental arithmetic problems presented and answered orally. Part B is intended for 6 and 7 year-old children only. Performance can be affected by formal teaching but the problems are such that a child who has not yet received any formal instruction in mathematics will still be able to do them.

(b) Aim

The aim of Part A is to measure understanding of and skill in the manipulation of quantitative material in a relatively concrete way. The more specific processes and functions involved are as follows: counting ability, ability to apply basic mathematical processes; evaluation of quantity, size, length, fullness; comprehension of relational terms; spatial ordering and relatively concrete mathematical reasoning ability.

Part B is intended to measure mathematical reasoning ability on a more abstract level, and more specific numerical accuracy in mental arithmetic.

(c) Rationale

This test is based on the assumption that the comprehension of numbers and quantity and the ability to manipulate number concepts constitute important facets of a child's ability to function adequately in school and in other life situations.

Mental alertness is a prerequisite for the meaningful manipulation of numbers. Most intelligence tests therefore include tests concerned with number and quantity concepts as they show a close relationship with intelligence.

To some extent the test is based on Piaget's theory which holds that the quantity concept begins to develop at about five to seven years. At that age a child begins to differentiate quantity and fullness, size and fullness, length and fullness, etc. Approximately half of the items in Part A are based on this differentiation of the quantity concept. As the explicit use of numbers is only required in the more difficult items (as well as in Part B), it is assumed that the easier items presents a sound basis for the evaluation of basic concept attainment, quantitative judgement and reasoning ability in younger children.

It is surmised that this ability requires active concentration and attention contrary to the relatively passive attention (automatic reception of stimuli) which is essentially all that is necessary for competent performance on a memory test for digits (recalled in the same order, not backwards).

It is also hypothesized that when a child's performance in Part B is significantly weaker than his performance in Memory for Digits it may indicate either a poor mathematical aptitude or an inner anxiety for mathematical tasks, even more so when the performance in the verbal tests (e.g. Vocabulary) is significantly better than the performance in Part B of Number and Quantity Concepts.

2.5 Memory for Digits

(a) Content

This test is similar to the traditional memory for digits tests. In the six items of Part A the testee must repeat in the same order a series of numbers ranging from two to seven digits after they have been spoken by the tester. In the four items of Part B (which are only given to 6 and 7 year-olds) the testee must repeat backwards (in reverse order) a series of numbers ranging from two to five digits in length.

(b) Aim

The aim of this test is to measure auditory sequential short-term memory utilizing numerical material. Apart from auditory recall, Part B also demands reorganization of the stimuli.

(c) Rationale

The task requires the child to memorize, retain and later reproduce a number of unrelated elements; Part B also requires manipulation and reorganizational of the stimuli. The assumption is that a quick intake and reproduction of information constitutes an important facet of intelligence. Although less useful as a measure of general intelligence than other types of tests, the literature agrees that a number memory test has particular diagnostic value. Wechsler (1949) gives the following reasons for the inclusion of a memory for digits test in his scales: (a) it is a sound test for the lower levels of intelligence; (b) a marked falling off in this kind of test is often one of the earliest indications of mental deterioration as in particular cases of organicity.

Poor scores however could also be due to a hearing disorder and the tester should not lose sight of this possibility.

2.6 Block Designs

(a) Content

In this test the child is asked to build a series of 18 structures and designs with red, white and red-and-white blocks. In the first six items the testee copies a structure built by the tester. From the seventh item onwards the tester also builds a model which is left on the table next to the two-dimensional design card. In the more difficult items the testee builds a design from the design card on his own; in other words, without having a model built by the tester. In each item a second attempt is allowed if the first was a failure.

From the fifth item onwards time is taken into account in the scoring. Even if a child only partially succeeds in completing the easier items, he can earn partial credit for his attempt.

(b) Aim

The aim of this test is to measure convergent production (reasoning) through the use of figural material (hence visual-spatial reasoning). The more specific processes and functions involved are: comprehension of figural stimuli; eduction of identities or similarities between two or more figural stimuli; pattern perception, pattern analysis, pattern recoding and pattern synthesis; abstract conceptualization and the ability to generalize; visual-motor co-ordination; visual-motor speed; and perception of spatial relations.

(c) Rationale

Copying two-dimensional designs with coloured blocks was initially used by Kohs (1923) in an endeavour to measure intelligence through the use of "non-verbal" material. This test was later adapted for use in the Arthur Performance Scale (Arthur 1930). The assumption was made that the ability to analyze, construct and reproduce an abstract two-dimensional design, may be regarded as a valid criterion of intelligence. Later investigations (cf. De Zeeuw 1971:86) provided evidence that a similar block design test not only is a sound "non-verbal" measure of intelligence but that it also has a clear-cut spatial-perceptual component. Investigations by Cohen (1959) confirmed the finding as the corresponding test in the Wechsler Scales revealed significant loadings in a factor identified as *Perceptual Organizational Ability*. However, the selection of a block test of the Kohs type is not merely based on tradition but also on overwhelming empirical proof of its clinical and diagnostic value.

A successful imitation of the three-dimensional block models built by the tester depends on the correct perception by the testee of the position of two or more objects in relation to himself and in relation to each other. Hence it is assumed that the child who experiences problems in this test, will also experience problems in other tasks demanding perception of spatial relations (e.g. reading, mathematics).

In the more difficult items, abstract two-dimensional geometric designs have to be broken up in a number of elements in order to reproduce the three-dimensional figures. These items are considered useful as a check of whether the testee maintains a consistent problem-solving strategy, or whether he knows how to adapt his strategy or whether he rigidly maintains a particular strategy (especially a less efficient one).

In general a block design test is also regarded as a test sensitive to organic brain disorders, in particular those of the right hemisphere (cf. Madge and Van der Westhuizen 1971).

2.7 Story Memory

(a) Content

The tester reads a simple "story" to the testee who is then asked to recall it. The words need not be repeated verbatim, but scoring is based on the number of essential elements or ideas remembered. Substitutions are sometimes allowed (e.g. Mrs for *mommy* and Mr for *daddy* in items one and two).

(b) Aim

The aim of this test is to measure short-term memory for meaningful verbal material. It is conceivable that facility in verbal expression could contribute to a good performance in the test.

(c) Rationale

It is assumed that the ability to store and reproduce meaningfully ordered verbal information in a relatively short period of time, represents an important facet of general intelligence at the semantic level. In contrast with the repetition of digits this type of test demands more advanced communication skills which are also essential for progress at school. Even a routine task such as the carrying out of a verbal commission requires this ability.

A further assumption is therefore made that logical memory is a prerequisite for all forms of learning and is necessary at every level of intellectual functioning. As in the case of Memory for Digits - possible hearing defects could result in a low score in this test.

2.8 Picture Riddles

(a) Content

In this test the 26 items comprise cards on which one to four coloured objects appear. The testee answers a questions by merely pointing to a picture. The easiest items are fairly concrete (e.g. "*Which one swims best?*" and the stimuli are a cock, a cat, a boat and a fish), while more difficult items are more abstract (e.g. "*What has an eye, but cannot see?*" and the stimuli are a child, an owl, a fish and a needle).

(b) Aim

The aim of this test is to measure concrete-practical judgement. It involves the following more specific functions and processes: comprehension of language stimuli; construction of hypotheses; reinterpretation of ideas and symbols; and the evaluation of a stimulus in terms of a given standard. (In order to make the task more concrete for younger children, answer choices are presented in the form of pictures. This does not mean that the test is intended to measure figural ability, although the absence of figural content cannot be accepted implicitly.)

(c) Rationale

A child should be able to integrate information in the form of pictures with verbal descriptions in order to select the correct picture. In this process the relationship between the various picture stimuli must also be checked and evaluated. The assumption is therefore that when a child identifies and isolates concrete objects on the strength of a verbal description, he demonstrates his ability to comprehend relatively complex language (in contrast to single words in the Vocabulary Test).

The second assumption made is that a picture riddle test at this age level constitutes a valid measure of a child's ability to redefine and transform relatively complex ideas in order to comply with new demands.

The third assumption made is that the ability to judge the suitability and effectiveness of ideas and symbols in the light of given criteria, represents an important aspect of intellectual functioning.

2.9 Word Association

(a) Content

This test consists of 30 incomplete sentences spoken by the tester which must be completed by the testee. In 22 of the items the child is required to indicate the opposite of the keyword (e.g. "*A mouse is small and an elephant is ... (big)*"). In the remaining 8 items the child has to name an appropriate action or object associated with what the tester said (e.g. "*A bird flies and a fish ... (swims)*").

(b) Aim

The test is intended to measure the ability to think relationally in terms of purely verbal stimuli (in other words convergent production of semantic relations). The format of the test is regarded as suitable for younger age groups who are not yet able to complete relatively abstract verbal analogies in the form A:B:C:? More specific processes and functions involved are the following: associative ability; conceptual thinking; and verbal fluency.

(c) Rationale

In the first instance this test is based on the assumption that the ability to produce a word or an idea complying with requirements in respect of a particular relationship, is essential for scholastic progress. The second assumption made is that the ability to think relationally represents an important aspect of intelligence. The third assumption made is that similar processes underlie associative reactions to stimuli and analogical problem-solving which may be regarded as one of the most reliable verbal measures of general intelligence (cf. Whiteley 1976; De Zeeuw 1971). Recent research by Gentile, Tedesco-Stratton and Davis (1977) supports such a hypothesis.

A further assumption made is that an association test not presented in multiple choice form, requires relatively more independence of thought and more ingenuity on the part of the testee.

2.10 Absurdities A: Missing Parts

(Note: The two parts of this test are regarded as two separate tests although they have been bound in one booklet.)

(a) Content

Part A comprises 20 items consisting of incomplete pictures in which the testee has to indicate the missing parts.

(b) Aim

This test is intended to measure the ability to judge the correctness of units of figural information. It requires *inter alia* visual memory for objects and environmental details as well as the ability to discriminate visually. Presumably concentration and a practical inclination are also crucial elements in test performance.

(c) Rationale

The assumption is made that the ability to comprehend familiar objects visually and to identify and to isolate the absence of essential rather than non-essential details represents a significant aspect of intellectual functioning.

Although good performance in the test requires some general knowledge, the assumption was made that critical visual perception and judgement make the most

important contribution to individual differences in test scores. For this reason it is regarded as a suitable test to measure the ability to evaluate figural information.

According to the literature, the most important clinical value of this type of test is that the naming of irrelevant details could indicate poor perception, a disturbed sense of reality or non-practical motivation. Similar tests are used in the Stanford-Binet and the Wechsler Scales.

2.11 Absurdities B: Absurd Situations

(a) Content

This test, comprising 17 items, consists of coloured pictures depicting absurd situations. The testee has to describe what is absurd about the given situation.

(b) Aim

This test measures the ability to notice absurdities in visual material. It is intended to measure the evaluation of figural systems and figural implications in contrast with the evaluation of units of figural information as in Absurdities A.

(c) Rationale

According to the literature whatever a child finds surprising (absurd, humorous) is related to his level of cognitive growth (cf. McGhee 1971, 1972, 1974). Charlesworth (1969) explains this phenomenon in the light of Piaget's theory. According to Charlesworth the child is surprised by events that violate his expectations. These expectations are established by the rules and norms abstracted from his experience. A stimulus that surprises is therefore one that disagrees with a child's present inner image of reality. Such an event has to be re-interpreted to fit in with the rules or else the system of rules should be revised or extended to

incorporate the events. Whenever restructuring of the system occurs rather than assimilation of the foreign stimulus, cognitive growth takes place. This total process depends on the suitability of the stimulus. If the child has not yet mastered relevant laws, divergences will not be perceived. On the other hand, divergences easily explained will not provoke interest and will therefore be equally ineffective. From this it follows that whatever a person finds surprising depends on the level of cognitive development. Absurdities B differs from Absurdities A in that the first contains logical discrepancies in contrast to perceptual discrepancies in the latter.

2.12 Form Discrimination

(a) Content

This test (which must be administered as a whole to calculate a GIQ or PIQ) comprises two parts: Part A consisting of 12 items and Part B consisting of 20 items. For each item there are four pictures or geometrical figures on a card. Three of the pictures/figures are identical while the fourth differs slightly. The testee's task is to indicate the picture/figure which differs from the other three pictures/figures. The main difference between Part A and Part B is that the pictures in Part A are coloured while those in Part B are black-and-white. The degree of difficulty of the items in every Part is varied by proceeding from a relatively concrete stimulus (familiar objects) to a more abstract stimulus (geometrical figures).

(b) Aim

The aim of this test is to measure the ability to discriminate visually, in other words the ability to distinguish differences and to notice similarities between relatively complex units of figural information. Since the pictures on a card differ

in respect of their position and spatial orientation it is assumed that the following processes are involved in test performance: form perception; spatial orientation; perceptual constancy; perceptual organization and the visual reasoning ability.

(c) Rationale

The ability to differentiate and to perceive similarities and differences between units (systems) of figural information is regarded as an important aspect of mental functioning in the visual-spatial field. Accurate visual discrimination is regarded as essential for progress at school. A child who cannot notice similarities and differences in this type of figural information, will probably find it difficult to distinguish between numbers, letters and words.

2.13 Social Reasoning

(a) Content

This test consists of 19 simple problem questions in response to which a child must indicate what he would do in the theoretical social situations or why some things are necessary (e.g. "*What would you do if you overturn a glass of milk?*" and "*Why should children go to school?*").

(b) Aim

This test is intended to determine to what extent a child is capable of making sound judgements in everyday social situations. It is presumed that success will, to a considerable degree, depend on the social knowledge a child possesses, his awareness of social norms and the reasons for social practices as well as his ability to assess past experiences and to make use of such experiences in socially acceptable ways. Test performance could also be affected by the ability to express oneself verbally.

(c) Rationale

The basic assumption made is that the knowledge required to answer this type of question, is obtained and internalized in the course of everyday life experiences. Similar items were first used in the original Binet Scales. In the course of time and with the use of this type of question in subsequent tests (cf. the Old Individual Scale) it became obvious that the attainment of and verbalized evaluation of basic knowledge regarding behaviour in social situations represent an important aspect of intellectual functioning. It is therefore assumed that the use of practical information in socially acceptable ways is a function not only appropriateness of thought but also of the awareness of reality, emotional stability and the ability for social contact.

Therefore this test may be useful to investigate possible cultural lags of neglect and to assess a child's interest in and orientation towards reality by this test.

According to Guilford (1967) and Meeker and Shadduck (no date) similar tests generally involve the factor called Evaluation of Semantic Implications (EMI) (cf. also Sattler 1974).

2.14 Grouping

(a) Content

This test consists of 26 items. The test material comprises (a) a set of small round discs in two colours, green and white, and (b) three sets (red, yellow and blue) of large and small triangular shapes and large and small round shapes.

The child is requested to (a) consecutively sort figures according to colour, shape, size as well as form-and-size, and (b) to complete figure series and designs.

(b) Aim

The aim of this test is to measure convergent reasoning ability (classification ability) with the aid of figural material. Sorting and grouping require that similarities and differences are considered.

It is assumed that the discrimination of colour and of shape are essential elements in test performance. It is also possible that auditory-perceptual skills could play a significant role in the easier items.

(c) Rationale

The underlying principles of this test comprise different related conceptualizations. In the first place the assumption is made that the ability to sort and to classify, is a valid criterion for visual-spatial reasoning ability which is regarded as an important facet of general intelligence.

In the second place, in accordance with Piaget's (1950) logical framework, it is accepted that growth is reflected in the child's logical classification abilities when, as his age increases, he is able to manipulate more variables at the same time when he sorts or groups objects. The average 3 to 4 year-old can sort while keeping one variable in mind, the average five year-old can keep two or three variables in mind at the same time (find the large, red triangle) while 6 to 7 year-olds are able to solve relatively complex classification problems.

A third assumption made is that figural features (e.g. colour), structural features (e.g. form) and conceptual features lie on a continuum with a relative quick change from the perception of perceptual features to conceptual features. With older children the easier items probably involve sound perception of a design rather than finding and applying classification rules.

On the basis of Guilford's (1956) research it can be accepted that the naming of colours and forms is an essential aspect of convergent reasoning when the test content is figural.

2.15 Picture Association

(a) Content

This test comprises 20 items. It has been standardized for 3 to 5 year-olds only; the corresponding test for older children is the Picture Analogy Test. The test material consists of 20 rectangular cards with two pictures and a blank box on each, as well as 20 sets of cards with four cards per set. The testee is required to select one of the objects depicted on the four separate rate cards that goes best with the two pictures on the rectangular card concerned and to place it in the blank box next to the two pictures.

(b) Aim

This test is intended to measure classification ability in younger testees who may find it difficult to do the traditional type of analogy test (in the form A:B:C:D). As the test does not require a vocal response, the child who finds it difficult to express himself vocally is given the opportunity to demonstrate his skill in the production of verbally meaningful classification under specific conditions and restrictions.

(c) Rationale

The ability to see relationships, to abstract general principles, to classify and to reason deductively were first regarded by Spearman (1927) as the essence of intelligence. This test then represents an attempt to measure these abilities in younger age groups with the aid of relatively concrete material.

2.16 Picture Analogies

(a) Content

The format of this test is similar to that of traditional analogy tests (e.g. the relationship between cock and hen is analogous to the relationship between boy ... (girl)). The analogy to be completed is given in the form of pictures on a large card with four boxes, two boxes at the top and two at the bottom. The box in the bottom right corner is blank. For each item there are four or five smaller separate picture cards from which the testee must choose one and place it in the blank box to complete the analogy.

(b) Aim

This test is in tended to measure analogical reasoning ability in 6 to 7 year-olds with the aid of pictorial stimuli.

(c) Rationale

Some authors (e.g. Whitely 1976) regard an analogy test as the best type of test to measure general intelligence. The test is therefore based on the assumption that individual differences in the solution of verbal analogies, provide a valid index of intelligence.

Since the child does not have to generate the solution himself but only has to choose between four or five pictures to complete the analogy, it is accepted that the process involved in this type of test format is evaluation rather than convergent production.

A further reason for the choice of this particular test format is to give the child, who has very little verbal aptitude, an opportunity nevertheless to demonstrate his

skill in analogical reasoning ability with semantic material. De Zeeuw (1971) is also of the opinion that the child who is not verbally gifted experiences fewer problems with this type of test than the typically verbally gifted child does with a figure series test or a matrix test.

2.17 Word Fluency

(a) Content

This test consists of nine items and is similar to traditional controlled association tests for smaller children. In every item the child is asked to mention as many words (objects) within a particular category as possible. There is a time limit of 40 seconds for each item.

(b) Aim

The test represents an endeavour to measure skill in the divergent production of semantic units. Language ability and fluency of ideas probably contribute considerably to successful performance in this test.

(c) Rationale

This test is based on the assumption that the ability to produce a large number of elementary ideas that comply with given requirements, is a valid criterion of divergent reasoning ability. It is also surmised that performance in this test will indicate creative ability.

So far only the number of correct responses are scored, even though all may belong to the same category, e.g. different kinds of fruit only instead of fruit, vegetables, confectionery, etc., when the stimulus is "foodstuffs". Further research

is envisaged to establish the diagnostic meaning of the number of categories used by a testee.

2.18 Gestalt Completion

(a) Content

This test, comprising 19 items, is administered in two ways according to the age of the testee. For 3 to 5 year-olds each item consists of three cards with incomplete drawings to be identified by the testee. In each item the picture on the first card is most incomplete, the next is more complete and the one on the third card is most complete. If the testee is able to identify the object/action on the first card within 10 seconds three points are earned, otherwise the second (the more complete) card is presented. If the object/action on the second card is identified within ten seconds two points are earned, otherwise the third card (the most complete card) is presented. If the testee is able to supply an acceptable response within 10 seconds one point is earned.

Only the first card is presented to 6 and 7 year-olds for ten seconds and scoring is either one point or nil points.

(b) Aim

This test measures the ability to perceive apparently disorganized or unrelated parts as a meaningful whole within a time limit. Essential elements of test performance are probably the following: visual alertness and visual memory; flexibility of closure and speed of closure; and artistic aptitude.

(c) Rationale

The first assumption made is that the ability to construct a meaningful picture from incomplete or restricted visual information is a valid criterion for the "closure" aspect of general intelligence. In other words, it is accepted that the ability to accomplish "closure" of figural information is an important aspect of intelligence with implications for successful progress at school. A second assumption made is that this basic perceptual capacity is manifested at a more general level than the conceptual ability to comprehend and integrate a complex situation.

2.19 Picture Puzzles

(a) Content

In this test the child has to assemble a series of seven sets of coloured puzzles which depict familiar objects. The puzzles comprise from two to six pieces per set. There is a time limit for each item that must be maintained. If the child fails to complete the puzzle the tester completes it for him after the time limit has expired. Thus the child sees that each task is possible before he attempts the next one.

(b) Aim

This test is intended to measure visual concept formation. It is presumed that form perception, spatial orientation and visual-perceptual co-ordination are essential elements of test performance. The latter probably plays a minor role in the test performance of normal children, but in children with motor disorders it could be an important factor. In any case it seems as if considerable interindividual differences exist between children in respect of the manipulation, the specificity of aim and the time taken to fit the parts.

(c) Rationale

As in the case of the Form Board Test the task mainly requires the testee to identify part-to-whole relationships. Both tests require the assembly of parts although the Puzzle Test differs from the Form Board Test in that the configurations in the former are fairly familiar objects rather than the abstract geometrical designs of the latter. The ability to synthesize parts into an organized, integrated whole is regarded as a valid criterion of the visualization component of general intelligence. Another reason for a Puzzle Test being included in the battery was to give the child who is relatively concrete in his thinking patterns, an opportunity to demonstrate the extent to which he is able to interpret and/or organize non-verbal material within a certain time limit. The Puzzle Test is a simple, intrinsically interesting test which may be useful when a child is not inclined to respond to the other performance of verbal tests.

2.20 Picture Series

(a) Content

This test, standardized for 6 and 7 year-olds only, consists of 12 items plus two examples. It is similar to traditional picture series tests which require a child to arrange a series of pictures, each depicting one step of an event, in a logical sequence. A partially correct answer also earns some credit. The testee's response is assessed on a purely formal basis (in other words the sequence prescribed in the manual).

(b) Aim

The aim of this test is to measure convergent reasoning ability (logical reasoning) with the aid of relatively concrete material. Factors such as perception, visual

comprehension, comprehension of the sequence and causes of events probably also affect test performance.

(c) Rationale

In order to be able to arrange the pictures in the correct sequence the testee must comprehend and assess the total situation. A similar test was first used by DeCroly in 1914 (see De Zeeuw 1971:88) and since then this type of test has been employed in various intelligence scales (e.g. the Wechsler Scales).

The authors mentioned above considered the ability to form an idea of what is represented by a particular picture and to relate this logically to the other pictures to form a meaningful story a sound criterion of intelligence. Another consideration in selecting a picture series test to measure this particular construct, is that this type of task gives the child with little verbal aptitude (who may experience problems with Social Reasoning) the opportunity to demonstrate his comprehension of and insight into social situations. It is presumed that, as in the Social Reasoning Test, a picture series test demands contact with reality. The hypothesis here is that children with relatively little social moulding and experience will perform relatively poorly in this test.

It is surmised that this test may be useful in the diagnosis of possible organicity (injuries to the right hemisphere) since a visual-perceptual factor in various factor analyses explained part of the total variance in performance on this type of task. According to the literature brain damaged individuals will probably find it difficult to "read" and to interpret drawings.

2.21 Visual Memory for Objects and Figures

(a) Content

This test consists of two parts, namely Part A and Part B. Part A concerns objects and consists of two examples and six test items. Felt figures of familiar objects such as a sock, a horse, a tree etc., in different colours are presented to the child in sequences ranging in length from one to six objects per series. The complete series of objects is shown to the child for five or ten seconds (depending on the number of objects in the sequence). Thereafter the testee is asked to select similar objects to those shown to him, from another group of objects and to arrange these in the same sequence as on the stimulus card.

Norms were established for two methods of scoring: first, for the number of objects correctly remembered, irrespective of the sequence in which they are placed by the testee (responses), and second, for the correct sequence (position) of the objects as depicted on the stimulus card.

Part B consists of 13 items involving geometric forms. The same procedure in respect of presentation and scoring as in Part A is also followed here.

(b) Aim

This test endeavours to measure (a) visual memory span and (b) visual sequential memory. The ability to concentrate will probably play a crucial role in test performance. It is possible that children who are able to attach verbal labels to visual objects/symbols, may thereby improve their performance.

(c) Rationale

The assumption made here is that the rapid intake and reproduction of visual information are important facets of general intelligence and that they are essential for progress at school.

2.22 Copying

(a) Content

This test was standardized for 4 to 7 year-olds only and consists of 12 items. The testee is required to copy a geometrical figure from an example. The figure to be copied sometimes comprises a configuration of two adjacent figures. The test is scored according to prescribed criteria.

(b) Aim

This test measures the ability to correctly reproduce a design presented visually. The following more specific skills are supposed to be involved: hand-eye co-ordination; perceptual ability; comprehension of spatial relations; visual-motor organizational ability.

(c) Rationale

This test is based on the assumption that smaller children are inclined to perceive a figure globally, in contrast with older children who begin to notice detail. Perception of the whole is adequate for most simple tasks involving fitting, while copying figures demands perception of every detail and the organization of the parts into a whole. However, it is assumed that even in the more simple figures (except the circle), the ability to analyse a figure into its component parts, will contribute to a relatively better performance in the test. According to the literature a good performance in the copying of figures is significantly related to scholastic

achievement. Wechsler (1967) points out that scores in this type of test also positively correlate (in the particular ages) with scores in other measures of intelligence. He is of the opinion that the correctness of a response depends primarily upon perceptual and visual-motor organization, the development of which is closely tied to increasing chronological age. The possible diagnostic value of the test lies in the fact that unusual deficiencies in executing the task often serves to call attention to serious developmental lags and probable organic deficits.