

THE INFLUENCE OF THE HOME ENVIRONMENT ON THE ACADEMIC
PERFORMANCE OF SECONDARY SCHOOL CHILDREN

BY

FLORAH MABOGWERA MAJA

submitted in fulfilment of the requirements
for the degree of

MASTER OF EDUCATION

in the subject

PSYCHOLOGY OF EDUCATION

at the

UNIVERSITY OF SOUTH AFRICA

SUPERVISOR : MR G E PIENAAR

JANUARY 1998

"I declare that : THE INFLUENCE OF THE HOME ENVIRONMENT ON THE ACADEMIC PERFORMANCE OF SECONDARY SCHOOL CHILDREN 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."

.....*Maja*.....

Florah Mabogwera Maja

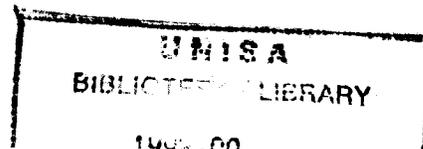
...30...JANUARY...1998

ACKNOWLEDGEMENTS

I would like to express my sincere thanks and appreciation to the following people :-

- * Mr G E Pienaar, my supervisor, for his invaluable assistance and guidance and for the time he devoted to me.
- * Ms SanMarie Hugo for her tireless efforts and patience in processing all the questionnaires for empirical investigation.
- * My mother, for her encouragement. She stood by me, not only during this research study, but over the many years of my life.
- * My daughter Lebogang, My uncle Lekgau, as well as my very best friend Tommy, for their support and motivation during difficult times, not forgetting their patience and love always.

JANUARY 1998



373.1264 MAJA



0001708268

To Lebogang, my daughter

and Tommy, my very best friend

HE IS JUST A CHILD

There he stands,
With his heart beating fast,
It's his turn at last.
Mom and dad can't help him now,
He stands all alone.

If you are ever tempted to shout or to moan
Remember he's just a child
Who stands all alone.
So open your heart
and give him a break,
For it's moments like this
A man you can make.

So encourage the child
And please don't forget,
He's only a child
Not a man yet.

Anonymous

SUMMARY

THE INFLUENCE OF THE HOME ENVIRONMENT ON THE ACADEMIC PERFORMANCE OF SECONDARY SCHOOL CHILDREN

by

Florah Mabogwera Maja

Degree : Master of Education
Department : Psychology of Education
Supervisor : Mr G E Pienaar

The primary aim of this research was to determine whether the home environment of secondary school children has an influence on their academic performance.

A literature study was done where the major aspects of the home environment were identified: family lifestyle, parental involvement and attitude, physical living conditions. An analysis of academic performance and the factors affecting it was done. A measuring instrument was developed in order to measure the home environment in terms of being positive or negative.

The results of the empirical research indicated that while home environment and age do play a significant role in the academic performance of secondary school children, gender, maternal employment, and whether the child lives permanently with both parents, did not.

The educational implications of the findings and the teacher's role are discussed, and guidelines regarding the development of a home environment conducive to better academic performance are given.

Key words:- Home environment, academic performance, physical living conditions, family support, secondary school child, maternal employment, gender, age, communication, single parent.

CONTENTS**PAGE****CHAPTER ONE****INTRODUCTORY ORIENTATION**

1.1	Introduction	1
1.2	Awareness of the problem	3
1.3	Statement of the problem	4
1.4	Aim of the investigation	5
1.5	Proposed research method	6
1.6	Explanation of terms	6
1.6.1	The home environment	6
1.6.2	Academic performance	7
1.6.3	Influence	7
1.6.4	Physical living conditions	8
1.6.5	The family	8
1.6.6	Parental attitude and involvement	8
1.6.7	Secondary school child	9
1.7	Programme to be followed	9

CHAPTER TWO**THE HOME ENVIRONMENT**

2.1	Introduction	12
2.2	What is the home environment?	13

CONTENTS (contd)	PAGE
2.3 Aspects of the home environment	14
2.3.1 Physical living conditions	14
2.3.1.1 Rural areas	14
2.3.1.2 Urban areas	14
2.3.2 The family	15
2.3.2.1 Family size	15
2.3.2.2 Educational levels of parents	16
2.3.2.3 Birth order	17
2.3.2.4 Age spacing	18
2.3.2.5 Family structure	19
2.3.2.6 Family lifestyle	21
2.3.3 Language development	22
2.3.4 Cultural background	23
2.3.5 Parental influence	25
2.3.6 Parental involvement	27
2.3.7 Parental attitude	29
2.3.8 Parental educational styles	30
2.3.9 Parent child relationship	32

CONTENTS (contd)	PAGE	
2.4	Summary	34
CHAPTER 3	ACADEMIC PERFORMANCE	
3.1	Introduction	36
3.2	What is academic performance?	37
3.3	Cognitive development	39
3.3.1	Development of thought	41
3.3.2	Formal operational thought	43
3.3.3	Attention	44
3.3.4	Short and long term memory	45
3.4	Theories related to academic performance	48
3.4.1	Structuralism	48
3.4.2	Information processing	54
3.4.3	Behaviourism	55
3.4.4	Social learning theory	58
3.4.5	Summary	59
3.5	Factors affecting academic performance	59
3.5.1	Introduction	59

CONTENT(contd)	PAGE	
3.5.2	Hereditiy and environment	60
3.5.3	The home and family environment	61
3.5.4	Parental role	64
3.5.5	The school	65
3.5.6	General background characteristics	66
3.5.7	Achievement orientation	67
3.5.8	Self esteem	70
3.6	Summary	70
CHAPTER 4	RESEARCH METHODOLOGY	
4.1	Introduction	72
4.2	Hypotheses	73
4.2.1	Hypothesis 1	73
4.2.2	Hypothesis 2	74
4.2.3	Hypothesis 3	75
4.2.4	Hypothesis 4	78
4.2.5	Hypothesis 5	79
4.3	Selection of sample	80
4.4	Measuring instruments used	80

CONTENT(contd)	PAGE
4.4.1 The development of a measuring instrument to measure home environment	80
4.4.1.1 Introduction	80
4.4.1.2 The structure of the measuring instrument	81
4.4.1.3 The development of items for the measuring instrument	83
4.4.1.4 Instructions accompanying the measuring instrument	85
4.4.1.5 Key to the measuring instrument	85
4.4.2 The measurement of academic performance	85
4.4.3 Biographical features	85
4.5 Procedure followed during the empirical investigation	86
4.6 Processing of the results	87
4.6.1 Questionnaire (HEQ)	87
4.6.2 Norms of the HEQ	87
4.6.3 Testing of hypotheses	87
4.7 Summary	88

CONTENT(contd)	PAGE
CHAPTER 5	RESULTS OF THE INVESTIGATION
5.1	Introduction 89
5.2	Item analysis of the home environment questionnaire (HEQ) 89
5.3	Reliability of the questionnaire 93
5.4	Determining the norms of the HEQ 93
5.5	Testing of hypotheses 100
5.5.1	Hypothesis 1 100
5.5.2	Hypothesis 2 102
5.5.3	Hypothesis 3 105
5.5.4	Hypothesis 4 106
5.5.5	Hypothesis 5 108
5.6	Factor analysis 110
5.7	Item analysis 110
5.8	Summary of results 118
CHAPTER 6	EDUCATIONAL IMPLICATIONS OF THE RESEARCH AND SUGGESTIONS FOR FURTHER RESEARCH
6.1	Introduction 120
6.2	Results and educational implications 122

CONTENT(contd)	PAGE
6.2.1 Home environment and its influence on academic performance	122
6.2.1.1 The role of parents	123
6.2.1.2 The role of teachers	124
6.2.2 The influence of age on academic performance	125
6.2.3 The influence of gender (boys and girls) on academic performance	126
6.2.4 The influence of living at home with both parents and academic performance	127
6.2.5 The influence of mother employment on academic performance	127
6.3 Evaluation of the research	127
6.3.1 Introduction	127
6.3.2 Further contributions of the report	128
6.4 Problematic aspects of the study	129
6.5 Recommendations for further research	129
APPENDIX	131
BIBLIOGRAPHY	139

CHAPTER 1

INTRODUCTORY ORIENTATION

1.1 Introduction

Throughout the developing child's life, much emphasis is placed on academic performance. It appears that a large proportion of the child's future success in life is dependent upon his level of academic performance. Many factors play a role in, or influence academic performance. Factors such as intellectual potential, motivation, the level of expertise of the educators, and self discipline are all related to academic performance. One other factor which also plays a role in academic performance, is that of the home environment.

Dienaar (1994:1) said that relations and behaviour patterns in the home presumably set the stage for those that occur outside the home; hence parent child interaction in the home may influence both academic results as well as general behaviour at school. The people in the child's home become progressively more meaningful to him. Vrey (1979:54) indicates that "in such an expanding home environment the child learns about different behaviours and attitudes displayed and that such stimulation and language forms the most important part of his development".

Different researchers agree that the type of home environment in which the child grows up will in some way have an influence on his development. Webber (1988:10) indicated that a large family, characterised by factors such as low socio-economic status, poor language acquisition, poor parent child relationship as well as

poor physical living conditions, will have a negative impact on the child's development. Thompson, Alexander and Entwisle (1988:425) referred to children from single parent families as being more disadvantaged in that their economic status, as well as their stability, was often compromised.

A major part of a child's life, approximately six hours every day, is spent at school. The child's development and performance at school is reflected in various areas, such as the academic, cultural and sporting spheres. According to Denaar (1994:1), "Achievement in school is typically seen as a way to satisfactory vocational attainment." Good academic results are often indicative of future vocational success.

However, children's performance in school related activities differs from one pupil to another. Various factors have been identified which contribute to poor performance at school. Denaar (1994:1) referred to factors such as fear of failure, membership of peer groups, educational issues, fear of success, self concept, and the home environment as having an influence on how well a child functions at school.

Home environment is a general term which could refer to a geographical attribute or the sum total of the stimulation the individual receives from conception until death (Ohuche & Otaala 1981:2). Aspects which constitute home environment are physical living conditions, family factors, language development, cultural background, parental attitude, influence and involvement, parental educational styles, as well as parent-child relationship.

1.2 Awareness of the problem

The author first became aware of the problem during her teaching experience at a high school in Siyabuswa, a village in Mpumalanga province. Secondary school children who did not achieve according to their potential at school often appeared to have problems related to their home environment. Some of the problems experienced by these adolescents with regard to their home environment are the following:

- * Physical living conditions at home which are not conducive to learning.
- * Low socio-economic status, which results in parents concentrating on the income of the family and paying little attention to the child's performance at school as well as his other needs.
- * Lack of communication between parents and their children.
- * Single parent families, where other roles, such as the father figure in the family, are not filled.

McCartin and Meyer (1988:379) indicated that "The family is perceived to be a balanced system, and the unbalancing of the system through death, divorce and parental separation forces all members to adapt to new situations." Kurdek and Sinclair (1988:90) found that "Children living with both biological parents performed much better on measures of intelligence and

school achievement as compared to those living only with their mothers."

Contrary to the above, Featherstone, Cundick and Jensen (1992:3) found no difference in academic and extra-curricular participation and performance. Similarly (Marsh 1990:327) stated that "It seems unlikely that father's absence in itself would show a significant relationship to poorer school achievement if relevant variables (including type of fatherlessness and socio-economic status) were adequately controlled."

Tlale (1991:17) found that "Poor relationships between parents and their children, or between parents themselves, will result in emotional instability in the children, which is not conducive to effective learning."

The question therefore arose whether such problems do have a significant influence on the child's academic performance or not.

1.3 Statement of the problem

In the light of the above analysis it appears that the problem of this investigation revolves around the following questions:

- * What is understood by the concept of home environment?
- * Is it possible to quantify and compare different home environments?

- * What are the major factors which have an influence on academic performance?
- * To what extent does the home environment influence academic performance?

1.4 Aim of the investigation

The aim of the investigation is to explore the influence of the home environment on the academic performance of a secondary school child. The investigation will consist of the following parts :-

- * Firstly a literature study will focus on aspects of the home environment, and how they are related to the performance of the child.
- * Secondly a study of the relevant literature relating to academic performance in general and factors which may have an influence on it, will be undertaken.
- * Thirdly, to develop a measuring instrument which will be used to measure certain aspects of the home environment in order to eventually describe it as being positive or negative.

1.5 Proposed research method

The literature studies will serve as the framework for the construction of the measuring instrument. An empirical research will then be carried out, using a sample of secondary school children from Siyabuswa, a village in Mpumalanga province. The testees will be given a questionnaire relating to the home environment. The testee's final grade 11 results will be used as a measure of academic performance.

1.6 Explanation of terms

1.6.1 The home environment

The term home has been described by Readers Digest (1988:787) as "Physical structure within which one lives, or as one's immediate family and environment to which one belongs". Wadkar (1982:6) gives the characteristics of a home as being "warmth, safety and emotional dependence".

The term environment is referred to as being "circumstances surrounding an organism, or a group of organisms". These circumstances include:

- * external physical conditions affecting and influencing the growth and development of organism,

- * a complex of social and cultural conditions affecting the nature of an individual (Readers Digest 1988:516).

Wadkar (1982:11) refers to the term home environment as "the psychological interaction within the family; the domestic life and all the related aspects, which are associated with the home, such as affections and social unit".

1.6.2 Academic Performance

Good academic performance could be defined as being when "the pupil reaches a level of scholarly competence which is approved by society of which the pupil is a member" (Rosa 1994:17). Sithole (1993:6) refers to the term academic performance as being "the extent to which the child actually performs when his or her knowledge and comprehension is being assessed and evaluated". In other words academic performance refers to the child's success in executing academic activities.

1.6.3 Influence

Influence is "the ability to make someone or something change. It is the power indirectly affecting a person or a course of events" (Readers Digest 1988:780). Aspects of the home environment which can possibly influence the academic performance of a child are the following:

1.6.4 Physical living conditions

Physical living conditions refer to the external environment. Ohuche and Otaala (1981:11) refer to the physical environment as "the home, which extends to include the village or town, physical and social dimensions and inter-relationships". At times living conditions become harsh with no proper infrastructural facilities. Ohuche and Otaala (1981:11) refer to such an environment as being detrimental to the development of the child as compared to other areas where there is development and where proper structures are in use.

1.6.5 The family

Dienaar (1994:1) refers to the family as "the primary environment for the child". For the purposes of this research, family will be defined in terms of family structure, family size, educational levels of parents, birth order, as well as age spacing.

1.6.6 Parental attitude and involvement

The way in which parents become involved in and influence their families can be seen in different ways. Certain researchers identified the following:

- * Educational climate at home (Wilson 1992:52).
- * Time allowed to spend on homework and viewing of television (Fehrmann, Keith & Reimers 1987:33).

- * Parental standards and expectations for a child (Granowsky 1991:6).

1.6.7 Secondary school child

The term "secondary school child" is meant to include all those pupils who are in grade eight to twelve. These learners are normally between the ages of twelve and eighteen, although in the South African context there are very often older learners within the school system. They are in the developmental stage commonly referred to as "adolescence". Vrey (1979:178 & 179) refers to the secondary school child as being at the "formal operational level of reasoning, the child reasons deductively and thinks abstractly and dynamically and tries out alternative possibilities". Van der Spuy (1992:17) refers to "adolescence" as a "process of achieving attitudes and beliefs needed for effective participation in society".

1.7 Programme to be followed

Chapter 1

The concepts of home environment and academic performance were introduced. The awareness and analysis of the problem were dealt with. The aim of the investigation and a proposed research method were outlined. Finally, an explanation of the relevant terms and the programme to be followed were given.

Chapter 2

An exposition of the concept of the home environment will be given. It will concentrate on various aspects of the home environment which relate to academic performance of children.

Chapter 3

In this chapter, the concept of academic performance will be investigated. Various theories relating to academic (schooling) performance, as well as factors affecting academic performance, will be highlighted.

Chapter 4

Chapter 4 will deal with the design of the empirical investigation. This includes the nature and selection of the sample, development of the measuring instrument, as well as the procedure followed during the empirical investigation.

Chapter 5

In this chapter, the discussion will revolve around the results of the empirical investigation. Conclusions will be reached regarding the influence of home environment on academic performance. Other factors such as gender, age, living permanently with both parents and permanent employment of parents will also be discussed.

Chapter 6

In this chapter, the educational implications of the research findings will be dealt with. An evaluation of the research will also be done. Finally, problematic aspects of the study will be discussed and recommendations for further research will be given.

CHAPTER 2

THE HOME ENVIRONMENT

2.1 INTRODUCTION

There are many factors which may have an influence on academic performance, one of which may be the home environment. In spite of general acknowledgement that the home environment may influence the child's school progress, relatively little scientific research has been carried out to determine the specific aspects of the home environment which have the most influence on the academic performance of South African children.

The term home environment is a broad concept which includes both social and physical aspects. Social aspects such as cultural background, language, parental influence and family involvement are all important. Physical aspects such as where the home is located and the material nature of the home also play a role.

This literature study will focus on the concept of the home environment under the following subsections:

- * Definitions of and theories regarding home environment.
- * The physical aspects of home environment.
- * The family.
- * Language and cultural background.

* Parental influence.

The focus of this study will be on the African rural child.

2.2 What is the home environment?

The Concise Oxford Dictionary (1995:649) defines the term home as "the fixed residence of a family collectively or one's family background". Bloom (1964:187) considered the term environment and indicated its meaning as being "conditions, forces, and external stimuli which impinge on the individual. These may be physical, social, as well as intellectual forces and conditions. The range of environments is from the most immediate social interactions to the more remote cultural and institutional forces. The environment provides a network of forces and factors which surround, engulf and play on the individual."

Keeves (1972:30) agrees with Bloom and regards the term environment as being "the total stimulus situation both latent and actual that interacts, or is capable of interacting with the individual. It is a source from which the stimuli emanate and not the stimuli as such."

To sum up the term home environment, it refers to an individual's place of residence, in which he interacts physically, socially, culturally and intellectually with other people.

2.3 Aspects of the home environment

2.3.1 Physical living conditions

2.3.1.1 Rural areas

Although a large number of African children grow up in towns and cities, many are born and live their entire lives in rural areas. Ohuche and Otaala (1981:10) describe a typical rural community as follows:

- * It is characterised by limited medical services and poor quality of dispensing and administration of drugs.
- * Non-existence of basic infrastructural activities.
- * Under-developed communication systems.
- * Simply constructed schools, normally characterised by shortage of books as well as audio-visual aids, non-existence of an office or a store room.

2.3.1.2 Urban areas

Most people from rural communities migrate to urban areas in search of better living conditions. This often results in overcrowding. Ohuche and Otaala (1981:11) describe typical living conditions in African urban areas as follows:

- * Living conditions are sanitary and health promoting.
- * Schools mostly have well trained teachers, good facilities and small classes.
- * Peri-urban and slum sections of the town often have harsh living conditions, such as limited running water, or having an omnibus refuse bin situated at one end of the street.
- * Public schools located in the high density area of town, have poor facilities and over-crowded classes.

Environments such as those in peri-urban and slum sections are not conducive to proper development.

2.3.2 The family

2.3.2.1 Family size

Webber (1988:9) indicates that numerous studies have suggested that when family size increases there is a corresponding decrease in ability, intelligence, expected educational attainment, adult occupational status and parental educational encouragement. Hence the youngest children in large families often become the most disadvantaged.

Webber (1988:10) states further that very often, people from lower socio-economic levels tend to have larger families than

those on a higher socio-economic level. On the contrary, lower intelligence may not be due to family size, but other factors instead, such as lower socio-economic status. Webber also states that other research findings show that family size has a negligible effect on ability.

Although polygamy is significantly decreasing in most societies, another dimension is being added by the emergence of "extra marital" children being born. They are often left with grandparents or taken care of by close relatives such as aunts and uncles. The families in which they are brought up become larger as a result.

Conditions such as large families, can have an effect on their development, especially their academic performance. To add to this, Cherian (1991:126) found a strong relationship between the size of the family and the academic performance of the children. In his findings children from small families out-performed those from large families.

2.3.2.2 Educational levels of parents

"The importance of parental educational levels is highlighted by data suggesting that the strongest and most consistent predictor of measured intelligence and expected education is educational encouragement from parents" (Webber 1988:9).

Bradley, Caldwell and Rock (1988:853) concur with Webber, "When parental educational level is high, parents are likely to

encourage their children educationally. Parents usually create a warm and accepting family environment which will in turn stimulate the child and allow him to participate in various challenging activities."

It seems that parental involvement and encouragement is likely to produce positive goal directed behaviours both academically and socially.

2.3.2.3 Birth order

Webber (1988:9) highlights the negative correlation between birth order and intellectual ability. He further indicates that first borns have better family relations, higher self esteem and better school performance than younger siblings.

In his findings Webber (1988:9) indicated the following:

- * First born children receive more parental attention and verbal stimulation.
- * They have greater parental expectations placed upon them for mature behaviour and higher achievement.
- * They are trained to become more task orientated and leaders, whereas the later borns tend to be more socially orientated people.
- * Fathers tend to be more actively involved in the parenting

of first borns, leading to stronger identification by eldest children with their fathers.

- * First borns even have closer emotional ties with grand parents and other relatives.

2.3.2.4 Age spacing

With age spacing, the emphasis falls on the wide spacing of siblings. Webber (1988:10) found that "There have been findings to the contrary, but generally the wider the spacing, the higher the IQ for both siblings."

Webber's research (1988:10) further indicated the following:

- * When age spacing falls within two years, the younger sibling tends to be less friendly to adults.
- * With wider spacing, there is a higher probability that both children will attend university.
- * Siblings who were five or more years apart both have attributes of first borns.
- * Therefore the wider the spacing the more socially oriented children become.

It appears that wide age spacing may be viewed as being beneficial to both younger and older siblings.

2.3.2.5 Family structure

In the decades leading up to the nineties many changes in family structure have occurred. Modern children do not live the protected life that their parents and grand-parents lived.

Clark-Stewart (1989:60) states that "In the United States one school child out of three has parents who are divorced. Thirty percent of these live in step families, whereas the other seventy percent live with their mothers or fathers alone".

Murray and Sandqvist (1990:3) indicate that "There are differences in educational achievement between children of one parent and those from two parent families." Most of the researchers agree that children from two parent families achieve at higher levels at school than children from disrupted families.

Recent research provides us with diverse findings and opinions:

- * Children from father absent families tend to get poorer results on cognitive tests than children from a family where a father is present (Thompson, Alexander & Entwisle 1988:425). They concluded that one reason for the poor performance of such children could be the teachers who hold negative expectations for them, who rate them negatively on homework completion, and less effective in study skills.

- * Astone and McLanahan (1991:309) indicated that numerous

studies have shown that children who grow up in single parent families are less likely to complete high school or to attend college than children who grow up with both parents. These researchers refer to the economic position of the single parent families as one reason for that.

- * Watts and Watts (1991:110) are of the opinion that the intellectual development of children in single parent families, was comparable to children from two parent families, when socio-economic status is controlled.
- * Murray and Sandqvist (1990:5) found no difference in a Swedish study in educational achievement between eight year old children with or without a father in the household, those without a father even tended to better adjusted to school.
- * Featherstone, Cundick and Jensen (1992:3) found differences in academic and extra curricular participation and performance, when male children from homes without fathers were compared to children from intact homes on their behaviour in school and at home.

Marsh (1990:327) states that "Changes in family structure such as the dissolution of a two parent family will have short term as well as long term effects on children and a wide range of academic outcomes." He concluded that the father's absence in itself is unlikely to show significant correlation with poorer

school achievement if relevant variables such as socio-economic status and the type of fatherlessness were controlled.

2.3.2.6 Family life style

Weisner and Garnier (1992:605) studied the lifestyles of the counter-cultural, non-conventional families and identified risks as well as benefits for children's school achievement. The authors refer to non-conventional families as "Single parents, unmarried couple status, frequent change of partners, as well as low incomes".

According to Weisner and Garnier (1992:605) the following points regarding family lifestyle are important:

- * A strong commitment to the non-conventional family rather than a lower commitment may help children to do better at school.
- * Family stability regardless of the form of the family, is associated with higher grades.
- * Meaningful values attached to one's family lifestyle can protect the family from some of the risks and changes.

Non-conventional families have lifestyles that could put their children at risk. The following are examples of such risks:

- * Stress associated with gaining a new parent.
- * Lower teacher expectations from such families.
- * Parental time and workload.
- * Uncertain daily domestic routine (Weisner and Garnier 1992:608).

As indicated above, the family's commitment to their lifestyle, maintenance of family stability and values can help their children to do well at school.

2.3.3 Language development

Language ability enables man to rise up in his environment. Its importance is based on the fact that it is the function of the human mind, and the fact that it is basic to all human development (Vrey 1979:125).

Language is the way in which man communicates with his world. It is a means of communication in which thoughts and feelings are symbolised so as to convey meaning to others. It may include different forms of communication such as writing, speaking, sign language, facial expression, gesture and art.

Language does not develop spontaneously, but must be acquired. The child's exposure to language will enable him to broaden his environment further. Everything that the child learns is to a

certain extent dependent upon his knowledge and control of language with regard to education (Vrey 1979:129).

The child's home language forms the basis for his learning. It is important for the child to have a good command of his home language before entering school. Webber (1988:12) refers to consistent predictors of children's verbal and problem solving abilities as being the levels of oral and written language used in the home.

Bloom and Lahey (1978:1) as well as Hamachek (1979:86) highlight the point that "the growth of language does not take place in a vacuum." Belkin and Gray (1977:86) state that environmental factors such as good models of speech and stimulation in the home are vital for language development. Hitchcock and Oliver (1976:322) state that poor performance of children from socio-economic environments appears to be limited to vocabulary as opposed to syntactic development.

2.3.4 Cultural background

There are quite a number of definitions of culture which have been used previously. Ford (1993:51) defines culture as "values, beliefs, attitudes and norms unique to a group, bound by race, gender, location, religion, or a social class."

Culture and ethnic background may influence the home environment, as well as the child's performance. Diaz-Soto (1989:23) states that "Studies with ethnic children revealed that there are a set

of common environmental variables characteristic of a given ethnic group. The specific culture of the environmental influences has not been identified."

Diaz-Soto (1989:23) states that "Different cultures were found to place different values on achievement in particular fields. The particular culture which the family is a part, is thought to influence the child's performance."

Davis (1994:19) says that when academic achievement, for example, is valued by a particular culture, success or failure in this area will have a greater effect on the child's self concept than it would have if less value were placed on this aspect. If a particular aspect is not valued by the culture in which the family finds itself, the individual will be less affected if he is not competent in that field.

According to Ford (1993:50) cultural forces within Black families in the USA, conflict with those of the other cultures:

- * Blacks have struggled for generations to provide educational opportunities for their children, usually against difficult odds and often in the face of severe threats to their own safety.
- * Black parents expect their children to take advantage of opportunities that they were denied and to surpass them in achieving the comforts of life.

- * Blacks place a high priority on academic achievement.
- * There is an interference of social, cultural and psychological forces in the learning process of Black students.

An aspect of African and South African Black culture which may have an effect on education, is the traditional practice of mountain schooling.

Secondary school children, from the age of 12 years, go to the mountain school for a period of 4 to 12 weeks. Different cultures conduct the mountain school in slightly differing ways, although the main issue is to teach the responsibilities of manhood. When they return they are regarded as adults and can take part in any activities which involve adults.

Unfortunately some of the children, after completing the mountain school, no longer show any interest and progress at school. They often concentrate on community issues falling behind in school work. On the other hand they may drop out of school, and start searching for work.

2.3.5 Parental influence

The importance of identifying and understanding all the factors which may influence the aspirations of the secondary school child cannot be overlooked. One such factor is parental influence, which appears to have an important impact on the child.

Parents may either influence their children directly or indirectly, without being aware of it. Stevenson, Roscoe and Kennedy (1988:349) found that parental literacy, parental attitude about reading, the home environment, parental teaching, cultural values and beliefs can play a role in that regard.

A study by Wilson (1992:52) indicates that the presence or absence of a climate of educational support in the home is likely to influence whether or not the adolescent will attend tertiary education. In his study he found a higher percentage of university enrolment in families where university attendance was taken for granted, and the other way round.

Fehrmann, Keith and Reimers (1987:33) found that parental influence on time spent on homework and viewing television can improve academic learning indirectly as these activities in turn influence academic learning.

Rumberger, Ghatak, Poulos, Ritter and Dornbusch (1990:285) show that another way in which parents influence children is by imparting appropriate values, aspirations and motivation needed to persevere and succeed in school. Rumberger et al. (1990:285) highlight the importance of parenting styles that foster good communication between parents and their children.

The following factors of parental influence were outlined by Steckman (1988:4) as being deeply embedded in a cultural family background and influence general achievement:

- * Temperament.
- * Ambition.
- * Attitude towards test situation.
- * Ability or tendency to work quickly on a task within strict time restrictions.
- * Attitude towards the examiner, competitiveness and risk taking.

2.3.6 Parental involvement

Parent involvement is considered a critically important component in children's educational and cognitive development. Research suggests that involved parents can make a difference. There are many ways in which parents can be involved in their children's educational and cognitive development:

- * Family work habits, such as planned use of time for studying.
- * Family support with regard to scholastic activities.
- * The family participating actively in activities which have educational value.

- * The family emphasizing language development.
- * Parents set up standards and expectations for the child.
- * The family reinforce the child's self esteem (Granowsky 1991:6).

Smith (1988:15) found that parents who stay involved in the learning process of their children create a climate of success, which serves as a springboard for future achievement. Such interest in their children's learning process, promotes the development of attitudes, which form the basis for achievement.

It is said that parents in high socio-economic status families become more involved in their children's education. Therefore the children's academic performance is likely to be better than that of children from low socio-economic families (Steckman 1988:4).

There are some underlying factors with regard to how children from the low socio-economic families may be disadvantaged :

- * The level of illiteracy among parents.
- * Cultural limitations resulting in very little communication between the child and parent (this is presumed to be a show of respect).

- * The changed circumstances where a high school child seems to have taken up a mantle of leadership even at home (Smith 1988:15).

2.3.7 Parental attitude

Parental attitude towards education is generally measured in terms of parental behaviour in relation to education and opinions expressed about education. Wadkar (1982:24) maintains that the child's interest in education and his attitudes towards it are determined by what parents think of school and of its worth to the child.

A high correlation was found between positive attitudes of parents towards education and high academic achievement (Wadkar 1982:24). Limited personal observation revealed that lack of interest in education on the part of family members and the burden of household duties can lead to underachievement.

It is therefore important for families to provide an educational environment which is supportive of the learning child. Such educational environment should not contradict the school's educational environment. Masilela (1988:29) indicates that there is a difference between middle class parents and working class parents with regard to their attitude towards education in that middle class parents show more interest in the educational progress of their children. This could be measured by observing how frequently parents visit the school.

Wadkar (1982:25) showed that parental attitude is generally measured in terms of behaviour in relation to education and opinions expressed about education:

- * Parental interest and the literacy level of the home are the most important variables.
- * Parental encouragement, guidance received by the child and parental aspirations for the child's education are widely accepted to be influential for determining the child's academic achievement.
- * Parental expectations are of vital importance.

It appears that parental attitude plays a major role in the academic performance of children.

2.3.8 Parental educational styles

Vos (1991:35) pointed out the importance of a parent who intervenes consciously and purposefully in the child's life. Therefore it is the responsibility of the parent to lead, help, support and accompany the child to self actualization.

Lamborn, Mounts, Steinberg and Dornbusch (1991:1041) refer to parental warmth, discipline, and consistency in child rearing as being associated with positive developmental outcomes in children.

Dornbusch, Ritter, Leiderman, Roberts and Fraleigh (1987:1245) outlined the following three parenting styles: authoritative, authoritarian and permissiveness. Vos (1991:35) refers to a responsible parental educational style as the only one which exerts a positive influence on the educand.

Therefore, the three parenting styles have consequences for the development of cognitive and social competence. They differ in values and behavioural standards that children are expected to adopt, and in parental expectations of their children. The following is a brief outline of the three parenting styles:

* Authoritarian parental educational style

These parents maintain and express authority over their children. They feel that they know more about life and its demands and therefore decide on all the activities and procedures (Vos 1991:35).

* Permissive parental educational style

These parents are tolerant and accepting. They use little punishment. Few demands for mature behaviour are made. They allow a considerable amount of self-regulation by the child (Dornbusch et al. 1987:1245).

* Authoritative parental educational style

These parents expect mature behaviour from the child

with a clear setting of standards. There is a firm enforcement of rules and standards. Children are encouraged to develop their independence and individuality. There is an open communication between parents and children. The rights of both parents and children are recognised (Vos 1991:35).

2.3.9 Parent child relationship

Parents are the most important people in the life of the child. They are the first people the child learns to know and become acquainted with, especially the mother. Vrey (1979:73) indicates that the relationship between the child and his mother forms an anchorage point for the forming of further relationships. Different researchers found a positive relationship between mother love and the happy, calm, positive behaviour of the child (Vrey 1979:73).

Van den Aardweg and Van den Aardweg (1988:159) indicate that a harmonious parent child relationship could alleviate deficiencies of the socio-economically disadvantaged. They explain further that physical growth, personality and intellectual development are also affected by parent child relationship. The way the child is treated and evaluated at home will determine the development of his sense of competence and self worth.

Van den Aardweg and Van den Aardweg (1988:159) studied the relationship between the adolescent and his parents and found the following:

- * Parents are either too lenient or they do not allow the adolescent to grow.
- * The adolescent has changed and regards his parents as no longer being good, wise and powerful.
- * Adolescents want their parents to care, to understand, and they want to do something without their parents.
- * Love is more important than money and property.
- * Authoritarian approach is resented.
- * Reasons for rules should be explained and mutually agreed upon.
- * Parents should do what they say and should spend time with their adolescents.

Vrey (1979:74) refers to attraction as "the polarisation effect of a healthy relationship". He indicates that "Even if the parent were to reject the child and feel estranged, the child will for a considerable time approach the parent." The child and the parent are emotionally bound together such that separation brings pain.

Sometimes the connection between the parent and the secondary school child may not be as direct as it should be. The presence of extended family members such as cousins, aunts, uncles and

grandparents in the family can contribute to this.

2.4. Summary

Chapter 2 dealt with the home environment and covered the following areas:

The introduction of the concept home environment. Different theories regarding the concept were considered. The following aspects of the home environment were emphasized:

- * The physical living conditions.
- * The family (this aspect includes the size of family, educational levels of parents, birth order, age spacing, family structure and family lifestyle).
- * Language acquisition.
- * Cultural background.
- * Parental influence.
- * Family structure.
- * Parental attitude.
- * Parental educational styles.

* Parent child relationship.

In chapter 3 the emphasis will fall on the academic performance of the secondary school child.

CHAPTER 3

ACADEMIC PERFORMANCE

3.1 Introduction

In the previous chapter the concept "home environment" was introduced. It appears that it is a possible factor which may influence the academic performance of a secondary school child. In this chapter the concept "academic performance" will be dealt with in more detail.

From the Concise Oxford dictionary (1995:7), "academic" has something to do with learning. Performance is regarded as "the act or process of performing or carrying out the execution or fulfilment of a duty". It is a "complex behaviour, which could result from a host of factors interacting with each other".

Gupta (1993:2) indicates that academic performance can be understood mainly in terms of two important factors, namely "genetic and environmental". "The former refers to inheritance and the latter includes in its ambit almost everything ranging from the role of parents at home to institutional competence level" (Gupta 1993:2).

In this chapter the term "academic performance" will be defined in scientific terms. This will be followed by a discussion of the cognitive development of the secondary school child. This will include the development of thought, Piaget's stages, attention and memory. Theories related to academic performance will then

follow. Structuralism, information processing theory, behaviourism and social learning theory will be discussed. Lastly factors affecting academic performance with special reference to the home environment, will be discussed.

3.2 What is academic performance?

Mussen, Conger, Kagan and Huston (1984:220) refer to academic performance as the appropriate use of knowledge and skill to solve problems. Okagaki and Sternberg (1991:122) refer to academic performance as "an indication of children's utilization of their intellectual competence outside their home". These authors refer to academic performance as representing aspects of both intelligence and cognition, and providing an index of the child's competence.

Gupta (1993:9) refers to academic achievement as "the knowledge attained or skill developed in school subjects, usually designated by test scores, or marks assigned by the teacher". It is the degree or level of proficiency attained in scholastic or academic work. It can also be referred to as an aggregate of total marks secured by the student in all subjects of study at the high school examination.

Mussen et al. (1984:220) tried to distinguish performance from competence. These authors indicated that "The knowledge and abilities a child possesses is called actual competence." Sometimes the child's performance may fail to reveal his actual competence. As when the child interprets a question in a way that

differs from the intention of the examiner. The examiner may judge the answer to be incorrect although according to the child the answer may be correct.

Mussen et al. (1984:221) express the importance of children learning to understand the assumptions of adult questions. These authors further indicate that "Some improvements in cognitive performances with age are due to changes in a very special competence, namely the child's understanding of the assumptions held by adults." Potential competence was explained by Mussen et al. (1984:221) as "dealing with children's ability to acquire a new skill or segment of knowledge". These authors use an example of a child who recalls only four out of eight words read to her by an examiner. They indicate that it is hard to identify the source of the poor performance. Was it failure to use actual competence, the child knew the words but could not remember them because she was distracted by outside noise? Or was it a flaw in the child's potential competence: the child is unable to register or recall the list of eight words because she does not know how to rehearse the information?

Academic performance has its origins in cognitive development. The study of cognition encompasses a broader band of intellectual mechanisms underlying skill acquisition and environmental adaption (Okagaki and Sternberg 1991:122).

3.3 Cognitive development

Different researchers have tried to define the concept of cognitive development. In most cases the emphasis falls on mental activities, knowledge acquisition and the use of knowledge, as indicated in the following definitions.

"Cognition refers to mental activities involved in the acquisition, processing, organisation and use of knowledge" (Mussen et al. 1984:219). Gerdes, Moore, Ochse and Van Ede (1989:54) regard cognition as "processes of knowledge acquisition and the use of knowledge. The processes include perception, recognition, imagination, judgement, recall learning, learning, thinking, concentration, problem solving and the use of language."

Dasen (1977:3) distinguished four factors responsible for cognitive development:

* Biological factors

Biological factors linked to the epigenetic system are responsible for the maturation of the nervous system. During growth there are interactions between the genotype and the physical environment.

* Equilibration factors

Individual development is a function of multiple activities, exercising, experiencing or acting upon the environment. Among these actions arise co-ordination, which depends upon the environmental circumstances as well as epigenetic potentialities.

* Social factors of interpersonal co-ordination

Social changes among children and adults exist, regardless of where the child comes from. Such changes do not depend upon educational transmission but operate on their own. This may take the form of asking questions, arguing, exchanging information and working together, which occurs throughout the period of development.

* Factors of educational and cultural transmission

Educational transmissions and traditions vary from one culture to another, as do cognitive processes. Different cultures as well as various languages are likely to have varying influence on performance. For example, in the previous chapter different researchers such as Diaz-Soto (1989:23) indicated that different cultures were found to place different values on achievement in particular fields. Davis (1994:19) also indicated that "When academic achievement for example is valued by a particular culture,

success or failure in this area will have a greater effect on the child's self concept than it would have if less value were placed on this aspect."

3.3.1 Development of thought

The nature of cognitive growth should be looked at carefully. The way in which children achieve, use and increase their knowledge is very important, because the organisation of thought affects the child's performance. Halford (1982:9) outlined the following important points with regard to the concept of thought:

- * Thought is symbolic and is directly dependent on internal representation.
- * Thought must be general in application.
- * Mental representations must generate other representations.
- * Elements generated must not be contradictory (consistency).

Bruner, Olver, Greenfield, and Hornsby (1966:26) stated that "The major vehicle for thinking in children was discovered by Kuhlman as being imagery and its manipulation. Kuhlman indicated that the cognitive operations of imaginative thinking preserve past experience but are dominated by rules of organisation. Imagery

aids some intellectual tasks associated with language acquisition."

The following points were outlined by Bruner et al (1966:26) in his findings:

- * Children who have a good imagination perform well in associating verbal labels with pictures.
- * Children who have a poor imagination perform better in concept formation from a set of pictures.
- * Functional or perceptual attributes are criteria for the meaning categories and correct use of language.
- * A child who is still in search of perceptual cues, will have difficulty in attaining conceptual meanings.
- * A child who has acquired conceptual categories, uses language more and imagery less, which decays with time.
- * Low imagery children may be intellectually supple but lose the ability to preserve perceptual experience, and become slower in learning and less accurate in perceiving visual stimuli.

3.3.2 Formal operational thought

For most individuals, the capacity to think and reason becomes fully matured in the adolescent years. Sarafino and Armstrong (1980:470) indicate that the highest level of intellectual functioning emerges in adolescence, where most people become capable of formal operational thought. Sarafino and Armstrong (1980:470) outline the following crucial competencies which characterise this high level of thinking and reasoning:

* Using abstract concepts

Adolescent thinking is less dependent on concrete perceptions. They can think about an object with almost equal effectiveness whether or not it is present.

* Contemplating hypothetical and future events

Adolescents can think through problems dealing with future and hypothetical events. They can even use premises that violate their prior experience and beliefs to solve problems.

* Consideration of all possible combinations

Whenever faced with a complex situation adolescents tend to seek and test all possible combinations of concepts systematically to reach a solution.

* Co-ordinated related variables

Formal operational reasoning allows for a logical co-ordination of both variables which are mostly required to master a task.

* Attaining formal operational thought

Reasoning competencies required to solve formal operational tasks are of a high level. Not all individuals attain the level of formal operational thought even in adulthood. There is a high positive correlation between IQ and formal thinking. Studies of people with subnormal IQ (60 - 80) consistently find no evidence to suggest that these people ever attain formal operational thought.

3.3.3 Attention

Attention is another of the important cognitive processes. Attention refers to learning about the environment and the world in general. This helps the child to develop an understanding of the environment. Hamilton and Vernon (1976:144) studied the concept "attention" and found that it was divided between the various aspects of an event such as:

- * Studying the sensory input.
- * Storing the event in the short term memory.

- * Processing the event cognitively by the activation of long term memory models.
- * Storing final synthesis in long term memory.

According to Hamilton and Vernon (1976:144), there are three stages in the development of attention:

- * The very young infant demonstrates selective attention from birth, even when he is premature.
- * A child of about four or five years of age shows selective attention by demonstrating habituation to patterns that he has seen before, and to select the novel pattern for studying.
- * In the third stage, the cognitive abilities of the child control his attention to a greater degree. The child continues to search until he has covered all the available evidence.

Attention is therefore an important component in learning and problem solving of all kinds.

3.3.4 Short and long term memory

Brierly (1976:90) indicates that short and long term memory exist in the brain. That is where events that caught attention, thoughts, and emotions are recorded in the memory section. Such

events can only exist for approximately 30 seconds in the short term memory while the long term memory can endure such information for a much longer period of time.

According to Brierly (1976:91) the ability to pass on selected information from the short term memory to longer term memory falls off between a quarter and a half second. Short term memory is a store holding a fixed number of items, which are destroyed when the new stimulus arrives.

Forgetting in the short term memory is explained by "the passage of time" whereas in the long term memory "interference" results in forgetting (Brierly 1976:91). Old learning is suppressed by new learning and vice versa. The new learning is rapidly forgotten because of the previous existence of the old. Therefore much forgetting is due to the need to remember other new things. What is relevant and interesting to a child is likely to be remembered. That which he cannot relate to his life or which has little meaning or significance to him, is likely to be forgotten (Brierly 1976:91).

Furthermore Brierly (1976:91) indicates that "Detail placed into a structural pattern, helps the matter not to be forgotten. If the material to be recalled is unrelated, such as a string of random numbers, a child will remember much less than if the material is connected as in a story or sentence."

Brierly states that anxiety causes forgetting. It reduces the brain's capabilities, including memory. Sometimes a child may

fail to attend to what his teachers said due to memory failure.

Possible causes could be day dreaming, watching too much television, an unhappy home environment, and fear of a particular teacher or lesson.

Brierly (1976:93) found that there were anatomical changes which take place in the brain during the period of learning.

Experiments done with adult rats showed that the brain could still go on developing and changing if new experiences are provided. This might well be similar in man and if so, it could have important implications for retraining in later life.

Engrams are defined by neuro-biologists as a kind of writing left behind in the brain as a result of conscious experience (Brierly 1976:91). It is a complex system of nerve cell connections developed by experience. A deprived child can build up engrams that may mark him for the rest of life by distorting and cramping his model of the world. Dogma or propaganda or orthodox thinking which we may be exposed to day after day in our every day life, especially our early life, can cripple minds with attitudes and establishment thinking (Brierly 1976:93).

Therefore education should aim at providing an individual with adequate information which will help him in critical situations he is likely to encounter later in life.

3.4 Theories related to academic performance

Tomlinson-Keasey (1985:361) indicated that "Cognitive development is a complex subject because the gap between the reflexes of infants and the cognitive skills of adults is so large. There exists a disagreement among different researchers concerning cognitive development." This resulted in different theories which describe different ways of adult thinking skills.

3.4.1 Structuralism

Piaget's career was devoted to studying the structure of thought and examining the evolution of knowledge from infancy to adulthood (Tomlinson-Keasy 1985:364). Seifert and Hoffnug (1987:59) indicated that Piaget's ideas have changed our understanding of the development of human thinking or cognition. The following ideas of Piaget were outlined by Seifert and Hoffnug (1987:59) as follows:

* The child as an active organism

Children are active and can direct their own activities and extract information from their environment. Infants build their understanding of their world from their environment. Adolescents need to play with a puzzle if they are to solve it. Children should be provided with an environment that is appropriate for their level of thought. They are then encouraged to explore.

- * Conclusions which they draw from their exploration would become an integral part of their thought structure. Teaching should mean providing an environment for exploring Mathematics, Language and Science, also to revise and generalize from their experience.
- * Teachers could question a child's reasoning, offer other points of view, and challenge conclusions, rather than merely providing the right answer.
- * Teachers should be more than mere guides to the knowledge of the world, but in acquiring the knowledge himself, it remains within the child himself.

This implies that the educator (parent or teacher) plays a crucial role in helping the child to explore his world. The educator is the mediator between the child and his world. The mediator focuses the child's attention on specific stimuli which may otherwise go unnoticed by the child. An example of this could be when a mother and child are walking in the garden. The child sees a leaf on the ground and picks it up. If the mother ignores this excellent learning experience, the child may very well throw it away, but if the mother, in her mediating role, focuses the child's attention to the leaf by asking the child questions regarding the leaf's colour, shape and related questions then the full experience or stimulus is gained (Seifert and Hoffnug 1987:60).

* Functioning of the child

According to Tomlinson-Keasey (1985:367) whether we are discussing an infant, a child, a high school senior or an adult, they all construct their knowledge in a similar way. They adapt to their environment and organise the information they encounter in the environment. The following three forms of learning concepts were formulated by Piaget :-

* Adaptation

The child adapts to the environment in two different ways. Firstly through assimilation. The new information and events are forced to fit the existing concepts. Secondly, children adapt to their environment through accommodation. They modify their existing structures to incorporate new information (Tomlinson-Keasey 1985:367). Tomlinson-Keasey (1985:367) further indicates that the two processes are complementary and occur simultaneously. Children adapt readily to their environment, assimilating new information to their current structures and modifying their old structures to incorporate new information.

* Organisation

According to Tomlinson-Keasey (1985:367) adaptation does not ensure cognitive advances. The child's

approach to the environment is through structures (schemata). The child transforms existing information. Structures change as new information is gleaned from the environment (Tomlinson-Keasey 1985:369).

* Equilibrium

"Equilibration refers to the co-ordination between the child's exploration" (Tomlinson-Keasey 1985:369). When children encounter new information it may disrupt the child's already existing structure and cause a state of dis-equilibrium. This author refers to children as having the means to restore equilibrium. They can accommodate their current structures to the new information or they can distort the new information to fit an already existing structure.

3.4.1.1 Piaget's developmental stages

Piaget distinguished four stages of development, namely: the sensory motor stage (0 to 18 months), the pre-operational stage (18 months to 7 years), the concrete operational stage (7 years to 12 years), and the formal operational stage (12 years onward) (Mussen et al. 1984:227). Normal children go through the stages in the same order as each stage builds on the previous one.

* Sensory motor stage

Cognitive growth is based on sensory and motor actions. The child forms mental representations, can imitate past actions of others, and devises new means of solving problems (Vrey 1979:153). Some of these actions are internalised and acquire a mental existence. This is the preparation for thought.

* Pre-operational stage

The pre-operational stage is manifested in delayed imitation and in children's imaginative or pretend play. The thinking of the pre-operational child is characterised by ego-centrism (Mussen 1984:227). The child thinks transductively. His thought consists of a series of mental symbols for actions (Vrey 1979:154).

* Stage of concrete operations

The child should be able to engage in mental operations that are flexible and fully reversible. They understand certain basic logical rules and are therefore able to reason logically and quantitatively. They can move freely from one point of view to another. Children are able to arrange objects according to some quantified dimensions such as weight or size. They can reason simultaneously about parts

and wholes (Mussen et al. 1984:233).

* Formal operations

Between the ages of 11 and 16 mental operations are completely integrated and thought attains a flexibility unrealised at the earlier stages. The limit goes beyond mental transformations of concrete objects. Alternatives and alterations of the problem are considered. Concrete experimentation is dominated by ideas and students' thinking processes are designed to find answers to questions (Tomlinson-Keasey 1985:388).

Baldwin (1980:233) agrees that formal operations begin at about 11 years and represent the adult stage of development. He indicates that there are some characteristics of formal operational thought which are important in the development of problem solving ability:

- * Firstly the development of the child's ability to understand logical relations among classes.
- * Secondly, he is able to review all the choices systematically so that he can go through them sequentially if necessary and know that he has exhausted them all.

3.4.2 Information processing

To learn, people have to smell, taste, see, hear or feel the events in the environment. Information is taken from the sense organs to the brain, so that the next time we encounter such events, we recognize them. Cognitive skills even extend to retrieve these memories at will (Tomlinson-Keasey 1985:403). Information processing is about a chain of events. Each step involves complex interactions between the environment and the brain. These interactions are, for example:

* Perceptual skills

Perceptual skills become organised early in life. The child can extract information about the environment very efficiently. The senses respond to isolated features of the environment. As the child develops, and the brain becomes more organised, perceptual systems process larger and more organised units of information (Tomlinson-Keasey 1985:404).

* Attention

The ability to attend selectively is very important to survival. People do not attend to all of the stimuli in the environment. There is a limit to attention that can be deployed. Selection, attention and allocation of attention to particular tasks are important information processing skills. In children these

skills begin to develop as early as three or four years of age (Tomlinson-Keasey 1985:411). Noise is distracting when trying to concentrate on a task. Interest in a subject is an interesting factor in determining attention span. Tomlinson-Keasey (1985:411) indicates that by 12 years of age, children's attention can be directed in a flexible way and they can decide to attend to particular parts of the environment. At this point they no longer focus on the most prominent aspect of their environment, but instead, they pick out the information that is most useful.

* Memory

The concept "memory" refers to the process of retrieving experiences from the past; remembering is the most complex of the information processing skills (Tomlinson-Keasey 1985:411).

* Development of imagery

Imagery has been discussed as a means to remember information, refer to paragraph 3.1 above.

3.4.3 Behaviourism

Seifert and Hoffnug (1987:52) state that only observable behaviour is useful in understanding learning and development,

and that in time, all developmental activity, no matter how complex, will be explained by one basic set of laws of learning.

3.4.3.1 Classical conditioning

Gerdes, Moore, Ochse and Van Ede (1989:54) indicate that Ivan Pavlov identified a form of learning known as classical conditioning. Two events which occur in succession become associated with one another in that they come to have similar meaning and to produce similar behaviour. These authors describe Pavlov's experiment as follows:

- * He rang a bell just before feeding a dog for a sustained period of time.

- * Eventually, the dog salivated whenever it heard the bell, even if it did not then receive any food.

Pavlov called the process by which the dog learned to respond in this way, classical conditioning (Seifert and Hoffnug 1987:52).

According to Seifert and Hoffnug (1987:52), when the experiment began, the sound of the bell was a neutral stimulus, because it really did not affect the dog's response to food. The sound became paired with the food a number of times. It lost its neutrality in Pavlov's terms and became a learned or conditioned stimulus, since it now had the power to bring about saliva. The salivation itself is called the conditioned response. Pavlov named the food stimulus the unconditioned stimulus. The dog's

responding salivation becomes the unconditioned response. Classical conditioning helps children to learn about and participate in the world around them (Seifert and Hoffnug 1987:52).

3.4.3.2 Operant Conditioning

According to Gerdes et al (1989:57) classical conditioning entails associating an existing stimulus with a new stimulus, whereas operant conditioning entails the acquisition of new behavioural patterns. Whether these behaviours will increase or decrease depends on their effects and consequences. Skinner believed that all learning and developmental change, in both humans and lower order animals will eventually be reduced to one set of basic scientific laws of behaviour (Seifert and Hoffnug 1987:53). Seifert and Hoffnug (1987:53) believe that children are constantly operating upon their world by responding to events that stimulate them through their senses. They learn when these operant responses are followed by a reinforcer; any stimulus that increases the likelihood that the response will happen again in similar circumstances.

Seifert and Hoffnug (1987:53) indicate that "a positive reinforcer increases the frequency or rate of a correct response by rewarding the person for making it". For example, a one year old child will try to walk properly when seeing her mother. If her mother praises her every time she tries to walk properly, the attempts will increase. "A negative reinforcer has the same effect but works by reducing a person's pain or discomfort.

Punishment refers to any stimulus that temporarily suppresses the response that it follows. This may be physical, verbal or it may cause social and emotional pain" (Seifert and Hoffnug 1987:53).

3.4.4 Social learning theory

Gerdes et al (1989:54) indicate that a learning theory emphasises the acquisition of responses learnt in reaction to environmental conditions. A learning theory is therefore concerned with observable behaviour. The question is why do people develop behaviours in the first place or to what degree are the behaviours important to their development? Seifert and Hoffnug (1987:53) indicate that some behaviourists argue that sudden changes in behaviour are not the result of either classical or operant conditioning. People seem to learn them by observing others. Seifert and Hoffnug (1987:53) indicate that some theorists believe that observational learning involves more than mere imitation of the behaviours of other people.

Through observing and trying out what they have seen, children actually internalise important qualities from the models they observe, which is very similar to identification. Learning by observation calls one to pay attention to the model and to remember what one has learned until there is an opportunity to try it out (Seifeirt and Hoffnug 1987:58).

A learner has to possess enough physical or motor skill to try out what he has learned. When a person interacts with his stimulus environment, change will result, which is known as

reciprocal determinism (Seifert and Hoffnug 1987:59). It appears that people actively participate in changing situations and are not merely passively influenced by them. Their attitudes, feelings and expectations about themselves and others must also be considered if their development is to be more fully understood.

3.4.5 Summary

After considering the above theories, it seems that the theories differ in as far as their focus and emphasis are concerned. Structuralism emphasizes the structure of thought and the evolution of knowledge from infancy to adulthood. With information processing theory, information is taken from the sense organs to the brain through the process of smell, taste, seeing, hearing and also feeling. This implies that in the next encounter the events are recognized. Behaviourists indicate that behaviour is useful in understanding learning and development. In social learning theory, children internalise important qualities from the models they observe. In the section which follows, the factors which influence cognitive development and academic performance will be considered.

3.5. Factors affecting academic performance

3.5.1 Introduction

Educationists have long sought to explain the variation of academic performances within a relatively uniform classroom

environment. Innate intellectual potential has always been thought to play a prominent role in the prediction of performance. However, recent research, by Gupta (1993:3) indicates that a student's academic deficiency is not solely due to intellectual potential, but rather to a combination of relevant factors.

The role played by parents, general atmosphere within the family, student's background, his self-esteem, the school and home environment are among the leading factors affecting the academic performance of the secondary school child.

3.5.2 Heredity and environment

Individuals differ from one another. "The source of this difference is not only the genetic structure of an individual, but also the environment the individual has developed in" (Ohuche and Otaala 1981:1). Environments are defined as "the family and school settings within which the adolescent functions" (Wilson & Wilson 1992:56).

The first learning environment is that of the primary caretakers in the home. Secondly, the primary social network with which the child usually identifies. The third environment is the school. The fourth is the larger society. Activities in all of these environments affect teaching and learning in school (Comer 1984:324).

"Every trait that an individual has and every reaction that he demonstrates, can in the final analysis, be attributed to the interaction between his heredity and his environment. The development of a child is greatly influenced by the environment in which he lives. The influence is not a simple but a complex interaction in which the type of character inherited greatly determines its propensity towards change by environmental influences" (Ohuche and Otaala 1981:2).

The role of the parents as active facilitators of children's cognitive development is of relatively recent interest. "Previously efforts were primarily directed towards understanding parents' genetic contribution to their children's intelligence as expressed in intelligence quotient" (Okagaki and Sternberg 1991:122). Okagaki and Sternberg (1991:122) also indicate that with the emergence of behavioural genetics, the roles of environment and heredity become part of the conceptual framework.

Heredity consists of two sets of genes received from parents at the time of conception. Environment is generally defined as a geographical attribute. But the psychological environment is regarded as "the sum total of the stimulation the individual receives from conception until death" (Ohuche and Otaala 1981:2).

3.5.3 The home and family environment

Steckman (1988:1) found that "The home environment is critical for performance of students from pre-school through high school." Okagaki and Sternberg (1991:122) state that "The family is the

only social unit in which biogenetic and social factors merge."

Although home and family environment play an important role in the life of the secondary school child, the neighbourhood may to a certain extent also contribute. Wiseman (1964:155) states that

"As the child progresses towards adolescence, his integration into the subculture formed by his friends becomes firmer."

Battle (1982:68) reported that "Underachievers generally come from low socio-economic, culturally deprived homes that are characterised by low income, poor housing, a large number of children and working mothers". Battle (1982:68) also states that "High achievers on the other hand, generally come from upper and middle socio-economic environments".

Jubber (1989:4) studied the way family income may contribute to a child's academic performance either directly or indirectly. "Its more direct effects relate to such things as the relationship between income and nutrition, health, quality of school attended, pre-school education, the quality of the home as an information environment, the value attached to education and the ability of the family to supply the kinds of educational support, equipment and experiences which foster school success."

The most powerful influence in a pre-adolescent child's life is the parent, a crucial force which can facilitate or impede achievement in children (Battle 1982:68). The parent-child relationship is the most essential one in the development of a

child's achievement patterns and self esteem. According to Jubber (1989:5) the mother's intellectual attitudes and abilities, as well as her own knowledge, constitute the major ingredient of the home as an informational environment for the young child. The parents' knowledge and the experience of formal learning and schooling they possess are of critical value to their child.

Steckman (1988:3) states that "Occupation has an effect on the degree of initiative and autonomy that is found in the home. The level of prestige of the occupation of the father is a strong indicator of the complexity of the home environment." Jubber (1989:5) concurs and states that "The mother's occupation gives some indication of the quality and quantity of school relevant information, the mother has at her disposal and is able to transmit to her child."

The composition of the family, for example two-parent families or step-parent families, have been reported to have an effect on children's academic performance. Berg (1990:9) highlights the fact that "Children from single parent families do not seem to suffer any long-term intellectual deficit, but circumstances within the one parent household may result in children becoming more disruptive, which could create less favourable conditions for achievement."

Similarly, when comparing children living with both parents and those from single parent and other types of family constitution taken together, single parent and other type of family affect academic performance more negatively than does the dual parent

family (Jubber 1989:8).

"When families get larger, the quality and quantity of cognitive interaction in the home is crucial. The child's ordinal position may influence the intellectual development, especially when birth spacing between siblings is taken into consideration" (Okagaki and Sternberg 1991:8). This was discussed in more detail in paragraphs 2.3.2.3 and 2.3.2.4.

3.5.4 Parental role

In the past the responsibility for education was completely within the powers of the family. Later on the responsibility was taken from the family by public authorities. Recently it has become the mutual responsibility of the public authorities and the family (Okagaki and Sternberg 1991:217).

Parents function as the child's primary interaction partners and socialisation guides. Their roles as enhancers of cognitive development and facilitators of academically relevant skills are presumably integral to the child's successful school adaptation (Okagaki and Sternberg 1991:122).

Earlier studies of parental influence tended to emphasize effects of maternal attitudes and behaviours on the young child's developing intelligence, while little attention was given to how both parents' efforts contribute to short and long term developmental outcomes (Okagaki and Sternberg 1991:124).

Children's perceptions of academic competence as related to parent's achievement, expectations, performance attribution and developmental beliefs, were found to influence successful school functioning. Granowsky (1991:5) indicated that "A student's success as learner depends largely on the support offered at home." Granowsky (1991:5) also stated that "Parenting behaviours supporting children's self esteem is most important for their success in learning."

To conclude, it appears that the parental role in the child's success in school should not be underestimated and that parents and teachers should communicate and co-operate.

3.5.5 The school

A school is a social system within a set of interacting social systems. Comer (1984:327) states that "What actually goes on at the building level is most consequential for child development and performance." Comer (1984:327) refers to the school as "being in a position to give young people the academic and social skills and desires needed to meet adult life demands, when the family and social network has not been able to do so".

However the focus should remain on the academic nature of the school, and recent declines in general academic performance in the country, are a cause of concern, as indicated by the media.

Disruptions in the classroom, educational methods and standards that are used, are some of the factors which can influence the

child's performance very negatively. In some cases the child's ability to write creatively and read critically are not emphasized. Lau and Leung (1992 :194) state that "Children who are more involved and motivated in school learning, and have warm and supportive teachers tend to do better in school. Attachment and identification with a meaningful adult at school motivates a child's desire to learn and perform well."

3.5.6 General background characteristics

Students who come from poor family backgrounds are often affected negatively both socially and psychologically. Hence their motivation to achieve and perform well at school may be disturbed. Ford (1993:50) states that "Historically, education has been a preferred method of social improvement for the poor, too many of which are disproportionately Black."

Most Black parents in South Africa have persisted in providing sound educational experiences for their children. According to Ford (1993:51) "Black parents strive to teach their children to compete with the other cultures, yet the value placed on staying in school and achieving well may vary among parents."

Students vary in the effort they spend on school work and the extent to which they perform well. Lockheed, Fuller and Nyirongo (1988:241) agreed with most researchers on the following conclusions regarding general motivation:

- * When students perceived that their achievement was due to their own efforts, achievement was recorded to be higher.
- * When students thought that the efforts they made in school work were recognised and rewarded by their teachers, they achieved at higher levels.
- * When a student's work was more frequently and carefully evaluated, achievement levels were higher.

Lockheed, Fuller and Nyirongo (1988:242) identified among other factors, parental values, the child's efforts and perceived efficacy and student's background factors as being influential to performance.

3.5.7 Achievement orientation

Okagaki and Sternberg (1991:122) regard academic performance as representing aspects of both intelligence and cognition. Academic achievement on the other side is viewed as "... an indication of the children's utilization of their intellectual competence outside the home" (Okagaki and Sternberg 1991:123). Although academic performance and academic achievement are defined separately, they cannot be separated from each other, as one incorporates the other.

School competence refers to a person's capacity to interact effectively with the academic environment. It involves acquisition of relevant knowledge and skills, and is strongly

linked to achievement outcomes (Grolnick and Ryan 1989:145). School competence can be defined as:

- * Grades and standardized achievement test scores which lead to competence assessment tests.
- * Ratings of classroom teachers which lead to competence and performance (Grolnick and Ryan 1989:145).

Intelligence according to Okagaki and Sternberg (1991:123), is "...the capacity to adapt to one's environment". Sarafino and Armstrong (1980:470) regard cognitive development as the development of intelligence. The essential raw materials of intelligence are cognitive capacities which emerge and reach full competence in perception, the formation and use of conceptual structures, linguistic skills, conditions and processes of learning and attention deployment.

The degree to which achievement related behaviours are externally initiated and controlled versus self-initiated and managed is known as academic self-regulation (Grolnick and Ryan 1989:145).

Grolnick and Ryan (1989:145) also suggest that self-regulation can be presented as a continuum from less autonomy to more autonomy. "Children who autonomously initiate achievement related behaviours and learning are more self regulated than those who do so out of internal feelings of pressure and anxiety, even more so than those who are dependent on direct interpersonal controls or rewards " (Grolnick and Ryan 1989:145).

Children need to be stimulated so as to get them involved in exploratory activities. Stimulation is therefore important for the development of cognitive skill and capacity, influences and reinforces attentional processes and exploratory activities (Sarafino and Armstrong 1980:485). When stimulated, children can pay attention for a longer period. The complex environment requires selective attention. Sarafino and Armstrong (1980:486) indicate that "Anxiety as in fear of strangers or strange environment may inhibit attention, with unfavourable results for manipulative play, exploration and cognitive development." This may result in a child's performance being impaired.

Stimulation and attention are prerequisites of play and exploration. Sarafino and Armstrong (1980:487) found that children of more sensitive, accepting, co-operative and accessible mothers explore more, seek support less frequently and show less distress. Alternatively Sarafino and Armstrong (1980:487) also suggest that "Parental control which is both intrusive and restrictive, provides the child with less opportunity to express himself, such as in play, which contributes to cognitive activities. The interaction between the child and the parent is also important as it can either enhance exploration or hinder it."

Sarafino and Armstrong (1980:487) concluded that "Children scoring high on fantasy, have more contact with parents, show identification with and preference for one parent, have superior ability for tolerating delay in gratification, exhibit higher levels of creativity and achievement orientation."

3.5.8 Self-esteem

Society's pressures contribute to the way the child judges or evaluates himself or herself. Gaspard and Burnett (1991:3) define self esteem as "evaluation" and further indicate that "evaluation expresses an attitude of approval or disapproval, and indicates the extent to which an individual believes himself or herself to be capable, significant, successful and worthy".

Self evaluation starts at home and expands to others outside the family. The teacher's reaction to the child's performance and performance of classmates influence the child's self evaluation (Gaspard and Burnett 1991:3). Academic performance affects the adolescent's opinion of self. Gaspard and Burnett (1991:3) also found that self esteem rose commensurately with the rise in academic achievement for both males and females. Conversely a vicious cycle of failure and lowered self esteem was observed when the student did not achieve academically.

3.6 Summary

In this chapter the concept of academic performance was explored. Cognitive development, theories related to academic performance as well as factors affecting academic performance were discussed. Such factors can have a direct influence on performance. They can also affect performance indirectly by altering important aspects of the child's personality.

Academic performance can be regarded as eventual educational attainment. Bartz and Maehr (1984:32) indicate that "academic performance occupies earlier temporal position. It occurs during the school years, the time of most rapid development and change".

The empirical design will be dealt with in the next chapter.

CHAPTER 4

RESEARCH METHODOLOGY

4.1 Introduction

In chapters two and three some of the relevant areas concerning the adolescent's home environment that may be related to academic performance were discussed. Recent research such as Webber (1988), Marsh (1990), Bradley, Caldwell and Rock (1988), Murray and Sandqvist (1990), Ford (1993) and Wilson (1992) have examined the relationship between home environment and academic performance. Research by Weisner and Garnier (1992:608) focused specifically on the adolescent's commitment to their lifestyle, and correlated this with their academic performance. Smith (1988:15) found that parents who stay involved in the learning process of their children create a climate of success which serves as a springboard for future achievement.

This investigation will concentrate on the relationship between the adolescent's family lifestyle, parental involvement and attitude, physical living conditions and their academic performance. It appears from the literature that a positive home environment, in which there is stability and involvement from parents, promotes good academic performance.

This chapter will therefore look at a research design that will measure the aspects of the home environment which have an influence on the academic performance of the secondary school child. Due to the vast area covered by the concept "home

environment" the researcher decided to concentrate on specific aspects of the home environment such as family lifestyle, parental involvement and attitude, and physical living conditions.

Certain hypotheses with reference to these aspects and the home environment in particular will be formulated. A brief description of the procedures used to test these hypotheses will be given. This includes the selection of the sample, a description of the measuring instruments used, the procedure used in formulating and administering the questionnaire, and finally the methods used in analysing the data.

4.2 Hypotheses

The following hypotheses based on the literature study were formulated:

4.2.1 Hypothesis 1

There is a significant difference between the average academic results of secondary school children from positive home environments and those from negative home environments.

Rationale

The home environment that is characterised by a large family, low parental educational levels, and poor age spacing, has a corresponding decrease in ability, intelligence, expected

educational attainment, adult occupational status and parental educational encouragement (Webber 1988:9-10). According to Thompson, Alexander and Entwisle (1988:45), children from father absent families tend to get poorer results on cognitive tests than children from a family where a father is present. Steckman (1988:4) reported that children from high socio-economic status families perform better academically than children from low socio-economic families.

On the other hand Weisner and Garnier (1992:605) found that a strong commitment rather than lower commitment to one's family lifestyle may help children to do well at school. Another important point mentioned by Weisner and Garnier (1992:605) was that of family stability and meaningful values attached to one's family lifestyle, which can protect the family from some of the risks.

It would seem likely that although a negative home environment can lead to poor performance, other factors such as family commitment, maintenance of family stability and family values can help children to do well at school.

4.2.2 Hypothesis 2

Learners will be divided into four groups as follows:-

Group 1: Learners who are 19 years of age and younger and have a negative home environment based on the results of the home environment questionnaire (HEQ).

Group 2: Learners who are 19 years of age and younger and have a positive home environment based on the results of the HEQ.

Group 3: Learners who are above 19 years of age and have a negative home environment based on the results of the HEQ.

Group 4: Learners who are above 19 years of age and have a positive home environment based on the results of the HEQ.

Null Hypothesis

There is no significant difference between the average academic results of the four groups.

Rationale

According to Bisanz, Morrison and Dunn (1995:221), "Cognitive development typically is described in relation to age, although age per se is viewed not as a causal variable, but rather as an index of various age related factors." Bisanz et al (1995:221) found the effects of age distinct on the following:

- * On conservation of numbers, performance improved as a function of age but not schooling.

- * On mental arithmetic, accuracy improved with schooling

rather than age.

According to Yore (1984:745), "Age has traditionally been accepted as a significant factor affecting achievement, regardless of content, topic of instruction and method used."

Yore (1984:745) found that age made a difference on achievement between grade 1 and grades 3 and 5. This author stated that "Piaget's cognitive development discounts the importance attributed to simply years of age but he suggests that social interaction, physical experience and equilibration are equally as important as maturity."

On the contrary, Clark-Lempers, Lempers and Netusil (1990:21) found that age of adolescents does not have a high correlation with academic achievement.

4.2.3 Hypothesis 3

Learners will be divided into four groups as follows:

Group 1: Secondary school boys who come from a positive home environment, based on the results of the HEQ.

Group 2: Secondary school boys who come from a negative home environment, based on the results of the HEQ.

Group 3: Secondary school girls who come from a positive home environment based on the results of the HEQ.

Group 4: Secondary school girls who come from a negative home environment based on the results of the HEQ.

Null Hypothesis

There is no significant difference between the average academic results of the four groups.

Kfir (1988:218) states that "When school adaptation is judged by marks and teacher evaluation, girls are consistently at an advantage. At a certain point usually in high school, the boys overtake the girls (except in the verbal field where girls remain superior)." Clark-Lempers, Lempers, and Netusil (1990:27) also confirmed the statement by stating that "Being a girl was associated with higher grade point averages."

Other researchers such as Marjoribanks (1983:1157) states that "Academic achievement has modest associations with perceptions of females regarding family environments. According to Fehrmann, Keith and Reimers (1987:334), "Parents of girls appeared to be more involved in their lives than parents of boys. Also that females spend more time on homework among high school seniors."

On the contrary, Masten, Garmezzy, Tellegen, Pellegrini, Larkin and Larsen (1988:752) found no sex differences in mean scores and the level of socio-economic status for both boys and girls.

4.2.4 Hypothesis 4

There is a significant difference between the average academic results of secondary school children who live permanently with both parents and those who do not live permanently with both parents.

Rationale

According to Murray and Sandqvist (1990:3) "There are differences in educational achievement between children of one parent and those of two parent families. It would seem likely that children from two parent families achieve better at school than those from one parent families. Astone and McLanahan (1991:309) state that the economic position of the single parent families may be one reason for their performance. Another reason for their poor performance could be the teachers who hold negative expectations for them, and also rate them negatively (Thompson et al 1988:425).

On the contrary, Marsh (1990:327) states that "The father's absence in itself is unlikely to show a significant relationship with poorer school achievement if relevant variables such as socio-economic status and the type of fatherlessness were controlled." Similarly, Watts and Watts (1991:110) state that the educational development of children in single parent families, was comparable to children from two parent families, when socio-economic status was controlled.

It would seem that socio-economic status plays a large role in various areas of the home environment, including the effect that coming from a single parent family has on academic performance.

4.2.5 Hypothesis 5

There is a significant difference between the average academic results of a secondary school child whose mother is employed full time and one whose mother is not employed full time.

Rationale

Battle (1982:68) reported that "Underachievers generally come from low socio-economic, culturally deprived homes that are characterised by low income, poor housing, a large number of children and working mothers. High achievers on the other hand come from upper and middle socio-economic environments."

According to Jubber (1989:5) the mother's intellectual attitudes and abilities, as well as her own knowledge constitute the major ingredient of the home as an informational environment for the young child.

It would seem that maternal employment on its own is not related to underachievement, when socio-economic status is controlled and the mother's knowledge serves as an informational source for the child.

4.3 Selection of the sample

The sample consisted of 284 grade 12 learners from four of the high schools in the Siyabuswa area. All the grade 12 learners from the four high schools were included in the research. From the 284 learners, 124 were boys and 160 were girls. The four high schools were randomly selected from a total number of seven high schools in the Siyabuswa area. The schools could be said to be representative of an Mpumalanga rural community and South African rural communities in general.

4.4 Measuring instruments used

4.4.1 Development of a measuring instrument to measure home environment

4.4.1.1 Introduction

Different researchers have investigated academic performance and the home environment of a secondary school child. Many questionnaires directed at the home environment and the academic performance were developed. Dienaar (1994:104) designed a questionnaire to test the relationship between family interaction and school achievement of adolescent boys.

Rosa (1994:203) designed a questionnaire to test the influence of parental involvement, discipline and choice of values on the scholastic achievement of secondary school pupils, with reference to the role of the father. Lenyai (1991:261) designed a

questionnaire on the relation between the preschooler's home environment and delayed language acquisition. Wadkar (1982:101) designed a questionnaire to test the role of the home environment on academic achievement.

Although many questionnaires have been developed, emphasis is on areas other than those focused on in this study. In most instances the setting and background for which they were developed is different from that of the current research. For example, most of the research questionnaires have been designed to suit pupils residing in urban areas, or have been tested in countries outside South Africa. As a result no specific questionnaire was acceptable and a new and unique questionnaire had to be developed.

4.4.1.2 The structure of the measuring instrument

4.4.1.2.1 Initial considerations

When an attempt is being made to assess a pupil's home environment, the following points should be considered before constructing the measuring instrument:

- * The measuring instrument should not be too long and time consuming.
- * The measuring instrument should be flexible so that it could be used in an individual or group test situation.

- * The administration of the questionnaire should be relatively simple.
- * The individual interview technique could not be used as it would have been too time consuming and difficult to interview all the learners involved.

4.4.1.2.2 Final structure

It was decided to construct and use a questionnaire with the following characteristics:

- * The aspects of the home environment as identified in paragraph 2.3 were refined and were used in the development of the questionnaire. The ten aspects originally identified were analysed and it was decided that for the purposes of this investigation some of them could either be discarded or be grouped together to form three major aspects. They are family lifestyle, parental involvement and attitude, and physical living conditions.
- * The questionnaire consists of thirty items. Ten specific items for each of the three major aspects were developed: ten specific items for family lifestyle, ten specific items for parental involvement and attitude, and finally ten specific items for physical living conditions. Each item has a 6 point scale: Always 6 5 4 3 2 1 Never. A scale of 6 was chosen as this makes it impossible for the pupil to choose a neutral or middle option. An answer of 4

and above would then seem to be positive, while 3 and below would indicate a negative answer.

- * Some items were answered in the opposite direction, that is the item was reversed and as a result the numerical values were reversed (3, 13, 28) in the scoring of the item.

4.4.1.3 The development of items for the measuring instrument

The following item numbers were allocated to each of the three specific aspects of home environment.

Aspect	
Family lifestyle	1 4 7 10 13 16 19 22 25 28
Parental involvement and attitude	2 5 8 11 14 17 20 23 26 29
Physical living conditions	3 6 9 12 15 18 21 24 27 30

Aspect no 1: Family lifestyle

The items in this section attempt to evaluate the level and nature of the family lifestyle. The following is an example of the items from this section:

1. My family does things together.

Always 6 5 4 3 2 1 Never

Aspect no 2: Parental involvement and attitude

The items in this section attempt to evaluate the level of parental involvement with and attitude towards the child's academic achievement. The following is an example of the items from this section:

2. My parents participate actively in my educational activities.

Always 6 5 4 3 2 1 Never

Aspect no 3 : Physical living conditions

The items in this section attempt to measure the physical living conditions at home. The following is an example from this section.

3. I use a desk for my written work at home.

Always 6 5 4 3 2 1 Never

4.4.1.4 Instructions accompanying the measuring instrument

The learners selected for the sample received a questionnaire containing all the items (refer to appendix A). The learners were then asked to follow the instructions given to them on their questionnaires as they were read out to them. The fact that they had to mark their responses on the spaces provided on the questionnaire was emphasised.

4.4.1.5 Key to the measuring instrument

Each item consists of a statement. The learner chooses a number between 6 and 1 as his response. If the learner chooses alternatives between 4 and 6, that is an indication of a positive response. If the learner chooses an alternative between 1 and 3, it is an indication of a negative response. Closer to 1 is more negative whereas closer to 6 is more positive.

4.4.2 The measurement of academic performance

The academic performance of the learners was obtained from their previous year's grade 11 final examination results. From each learner, an average mark was calculated for the 6 subjects.

4.4.3 Biographical features

The learners names on the questionnaires were only required in so far as they had to be matched to the average marks they obtained from their grade 11 final examination. Each learner

had to indicate his gender, age, the name of his/her school, the number of siblings from the family, as well as his mother tongue on the questionnaire. Additional information such as whether the learner lives permanently with both parents, and whether the mother was employed full time, also had to be indicated by means of either a yes or a no.

4.5 Procedure followed during the empirical investigation

4.5.1 Format of the questionnaire

The questionnaire consisted of two sections (refer to appendix A). Section A consisted of biographical information and section B consisted of the home environment items.

4.5.2 Administering the questionnaire

Before administering the questionnaire, the initial questionnaire items were discussed with colleagues in order to judge the content validity. Many changes were suggested and a number of items were either changed or left out altogether.

The questionnaire was administered by the researcher with the assistance of some teachers from the respective schools. All the grade 12 learners from the four high schools were then involved in the sample. The instructions were read aloud and the learners were given the opportunity to ask questions in order to clarify any problematic areas. The questionnaire itself took approximately thirty minutes to administer.

After completing the questionnaire phase, the average mark of each learner from the previous year's grade 11 final year examination result was obtained and tabulated for further processing.

4.6 Processing of the results

4.6.1 Questionnaire (HEQ)

An item analysis will be done for the HEQ and the reliability of the measuring instrument will be determined by calculating the Cronbach alpha-coefficient for the questionnaire.

4.6.2 Norms of the HEQ

The norms of the HEQ will be determined so that future researchers who might want to use the instrument, will be able to interpret their results in the light of the present study's results.

4.6.3 Testing of hypotheses

Analysis of Variance (F-test) will be used to determine whether hypotheses 2 and 3 should be accepted. T-test for independent samples will be used with the sum of the questionnaire as the grouping variable and subject mean as dependent variable for the whole sample, to determine whether a significant difference exists between the average academic results of secondary school children who come from a positive home environment and those who

come from a negative home environment. The median will be used to differentiate between positive and negative home environments.

4.7 Summary

In this chapter the planning and the execution of the empirical investigation was discussed. The results of the empirical investigation in terms of the statistical processing and the interpretation of the data will be discussed in the next chapter.

CHAPTER 5

RESULTS OF THE INVESTIGATION

5.1 Introduction

A number of aspects of the home environment were identified in the literature study (refer to paragraph 2.3). Although many of these aspects had formed part of previous research, it was decided that a new instrument would be developed in order to specifically measure the secondary school child's home environment. The development of this questionnaire was discussed in the previous chapter (refer to paragraph 4.4.1.3).

In order to test the hypotheses, the newly developed questionnaire was administered to 284 learners. Each learner's biographical information as well as the previous year's final year examination results were also obtained. These data were then processed using the statistical techniques described in paragraph 4.6. The results of these calculations will be discussed in this chapter.

5.2 Item analysis of the home environment questionnaire (HEQ)

An item analysis was done on the HEQ in order to establish whether each of the items made a contribution to the total of the questionnaire. In the case where an item made no contribution, or contributed negatively to the total, that item would be left out.

Another aspect of the item analysis is the alpha reliability coefficient. The reliability coefficient was calculated for the HEQ.

On the basis of the item-total correlation, and the reliability coefficient, it was decided whether a specific item should be retained or left out.

Table 5.1 indicates firstly that only item 13 showed a low negative correlation with the total. Items 3, 15, 22 and 27 showed a very low positive correlation.

Secondly, table 5.1 indicates that the reliability coefficient is not significantly higher if any item is left out.

It was therefore decided to retain all the items of the questionnaire.

TABLE 5.1 : ITEM ANALYSIS OF THE HEQ

No. of Subjects	:	284
No. of Items	:	30
Alpha reliability coefficient	:	0.6926
Mean	:	121,66
Standard deviation	:	17,71
Median	:	121
Item-total Statistics		
	Corrected Item- Total Correlation	Alpha if Item Deleted
Q1	.4111	.6716
Q2	.3390	.6778
Q4	.4379	.6690
Q5	.4743	.6701
Q6	.1741	.6901
Q7	.3077	.6789
Q8	.3605	.6760
Q9	.2037	.6875

Q10	.1173	.6928
Q11	.3570	.6756
Q12	.2518	.6828
Q14	.2988	.6791
Q15	.0092	.7041
Q16	.2445	.6835
Q17	.3435	.6781
Q18	.2203	.6853
Q19	.3182	.6777
Q20	.1332	.6917
Q21	.3261	.6767
Q22	.0650	.6974
Q23	.2223	.6851
Q24	.2263	.6849
Q25	.1205	.6926
Q26	.2250	.6849
Q27	.0276	.6970
Q29	.2494	.6830
Q30	.1862	.6883
RQ3	.0306	.6977
RQ13	-.0170	.7017
RQ28	.1211	.6930

5.3 Reliability of the HEQ

The closer the reliability of a measuring instrument is to 1, the smaller the difference is between the variance of the actual score and the observed score. When a measuring instrument is developed, an attempt is made to get the reliability of the instrument as close to 1 as possible.

In the light of the fact that the HEQ could only be administered once for practical reasons, (testing a second time could influence the spontaneity of the responses), the test-retest method could not be used. Constructing an equivalent form would be too time consuming, so the reliability was arrived at by calculating the alpha coefficient for the HEQ. The reliability coefficient was found to be 0,6926. Although a value of 0,8 and higher is preferable, the obtained value was considered to be acceptable.

5.4 Determining the norms of the HEQ

A norm is an objective standard whereby the scores which a testee receives on a measuring instrument, are interpreted.

Stanines (standard scores divided into nine categories as in table 5.2) were used to determine the norms.

The mean of the HEQ was found to be 121,55 and the standard deviation: 17,62. The minimum score obtained was 70 and the maximum 163. 284 testees were used in the sample. The z scores (standard scores) were then calculated. The standard scores,

frequency and cumulative percentages were then used to calculate the stanines as set out in table 5.3.

TABLE 5.2 LIMITS AND AREAS OF STANINES

Stanines	Limits		% of Areas
9	+ ∞	to +1,75z	4
8	+1,75z	to +1,25z	7
7	+1,25z	to +0,75z	12
6	+0,75z	to +0,25z	17
5	+0,25z	to -0,25z	20
4	-0,25z	to -0,75z	17
3	-0,75z	to -1,25z	12
2	-1,25z	to -1,75z	7
1	-1,75z	to - ∞	4

(Mulder 1989:205)

TABLE 5.3 TRANSFORMATION OF RAW SCORES INTO STANDARD SCORES
AND STANINES

Standard score	Frequency	Cumulative percentage	Stanine
-2,93	1	,4	1
-2,70	1	,7	1
-2,64	1	1,1	1
-2,36	2	1,8	1
-3,30	1	2,1	1
-2,24	1	2,5	1
-2,13	1	2,8	1
-2,07	1	3,2	1
-2,02	1	3,5	1
-1,90	1	3,9	1
-1,85	1	4,2	2
-1,79	1	4,6	2
-1,73	1	4,9	2
-1,68	2	5,6	2
-1,62	3	6,7	2
-1,56	2	7,4	2
-1,51	1	7,7	2
-1,39	3	8,8	2
-1,34	3	9,9	2
-1,28	2	10,6	2
-1,22	4	12,0	3

-1,17	4	13,4	3
-1,11	2	14,1	3
-1,05	3	15,1	3
-1,00	2	15,8	3
-0,94	2	16,5	3
-0,88	1	16,9	3
-0,83	7	19,4	3
-0,77	3	20,4	3
-0,71	5	22,2	3
-0,66	3	23,2	4
-0,60	7	25,7	4
-0,54	2	26,4	4
-0,49	5	28,2	4
-0,43	8	31,0	4
-0,37	10	34,5	4
-0,31	11	38,4	4
-0,26	5	40,1	5
-0,20	7	42,6	5
-0,14	6	44,7	5
-0,09	8	47,5	5
-0,03	10	51,1	5
0,03	6	53,2	5
0,08	4	54,6	5
0,14	8	57,4	5
0,20	6	59,5	5
0,25	9	62,7	6
0,31	7	65,1	6
0,37	5	66,9	6
0,42	4	68,3	6

0,48	3	69,4	6
0,54	5	71,1	6
0,59	3	72,2	6
0,65	5	73,9	6
0,71	9	77,1	7
0,76	7	79,6	7
0,82	4	81,0	7
0,88	3	82,0	7
0,93	6	84,2	7
0,99	4	85,6	7
1,05	7	88,0	7
1,10	1	88,4	7
1,16	2	89,1	8
1,22	2	89,8	8
1,33	4	91,2	8
1,39	2	91,9	8
1,50	4	93,3	8
1,56	1	93,7	8
1,61	1	94,0	8
1,67	1	94,4	8
1,73	2	95,1	8
1,84	2	95,8	8
1,90	4	97,2	9
1,96	2	97,9	9
2,01	1	98,2	9
2,07	1	98,6	9
2,13	1	98,9	9
2,18	1	99,3	9
2,24	1	99,6	9

2,35	1	100,0	9
Total	284		

TABLE 5. 4 RANGE OF STANINES

Stanine	Frequency	cumulative percentage	Range of sum of HEQ
1,00	11	3,9	70 - 88
2,00	19	10,6	89 - 99
3,00	33	22,2	100 - 109
4,00	46	38,4	110 - 116
5,00	60	59,5	117 - 125
6,00	50	77,1	126 - 134
7,00	32	88,4	135 - 141
8,00	19	95,1	142 - 152
9,00	14	100,0	154 - 163

It is possible to establish whether an individual's home environment is below average, average or above average. As a general rule it is understood that the bottom three stanines (1, 2 and 3) are regarded as below average, the next three stanines (4, 5 and 6) as average, and the top three stanines (7, 8 and 9) as above average (Mulder 1989:205). The classification of the scores is given in table 5.5.

TABLE 5.5 CLASSIFICATION OF THE HEQ SCORES IN CATEGORIES

Sum of HEQ	Below average	average	Above average
	0 -109	110 - 134	135 - 180

5.5 Testing of hypotheses

5.5.1 Hypothesis 1

The following null hypothesis was tested:

There is no significant difference between the average academic results of secondary school children from positive home environments and those from negative home environments.

The total score was calculated for the home environment questionnaire (HEQ) for each testee. The median of the total score was used as a dividing factor with which to differentiate between positive and negative home environments. The median was 121 with the minimum possible score being 30 and the maximum possible score 180. The scores above the median are indicative of a positive home environment and the scores below and equivalent to the median are indicative of a poor home environment. The average academic results were then tabulated and the t-test was then carried out.

TABLE 5.6 : RESULTS OF T-TEST : SUM OF HOME ENVIRONMENT QUESTIONNAIRE AND MEAN ACADEMIC RESULTS.

Sum of HEQ	Number of learners	Mean of academic results	Standard Deviation
<= 121	141	44,8794	8,502
> 121	139	47,1439	8,434
<p>t-value : 2,24</p> <p>df : 278</p> <p>2 tail significance : 0,026</p> <p>p < 0,05</p>			

Table 5.6 indicates that there is a significant difference between the mean of the academic results of the testees who obtained a score above the median and those who obtained a score below or equal to the median for the HEQ. The null hypothesis can therefore be rejected at 5% level of significance. The alternative hypothesis will then be accepted.

5.5.2 Hypothesis 2

The following four groups were identified:

Group 1: Learners who are 19 years of age and younger and have a negative home environment based on the results of the HEQ.

Group 2: Learners who are 19 years of age and younger and have a positive home environment based on the results of the HEQ.

Group 3: Learners who are older than 19 years of age and have a negative home environment based on the results of the HEQ.

Group 4: Learners who are older than 19 years of age and have a positive home environment based on the results of the HEQ.

The following null hypothesis was tested:

There is no significant difference between the average academic results of the four groups.

In order to compare the average academic results an analysis of variance test was carried out. These results appear in table 5.7 below:

TABLE 5.7 RESULTS OF THE ANALYSIS OF VARIANCE FOR AGE

Group	Number of testees	Mean of academic results
1	61	48,360
2	71	50,084
3	84	42,225
4	68	44,078

F ratio = 15,4419

P < 0,01

Results

There is a significant difference between the average academic results of the four groups. The null hypothesis can therefore be rejected at 1% level of significance.

In order to establish between which groups this difference exists, the Duncan Multiple Range Test was used.

The results indicate that there is a significant difference between groups 1 and 3, 2 and 3, 1 and 4, 2 and 4. The fact that there is a significant difference between groups 1 and 3, indicates that there is a significant difference between the average academic results of the learners who are 19 years of age and younger, and those of the learners who are above 19 years of age when both groups come from negative home environments. It could also be said that the home environment does not affect learners who are 19 years and younger as much as it affects those who are older than 19 years of age in terms of academic performance.

The significant difference between groups 2 and 4 indicates that age plays a role in academic performance in general in that younger learners tend to achieve better results than older learners in a school environment.

The fact that there is a significant difference between groups 1 and 4 and 2 and 3 seems to bear this out. The fact that learners from a negative home environment who are 19 years of age

and younger still perform better academically than learners from a positive home environment who are older than 19 years of age implies that age plays a greater role in the academic performance of the testees in this sample than home environment.

5.5.3 Hypothesis 3

The following four groups were identified:

Group 1: Secondary school boys who come from a negative home environment based on the results of the HEQ.

Group 2: Secondary school boys who come from a positive home environment based on the results of the HEQ.

Group 3: Secondary school girls who come from a negative home environment based on the results of the HEQ.

Group 4: Secondary school girls who come from a positive home environment based on the results of the HEQ.

The following null hypothesis was tested:

There is no significant difference between the average academic results of the four groups.

In order to compare the average academic results an analysis of variance test was carried out.

F ratio = 1,9416

The results indicate that no two groups are significantly different at the 0,05 level. The null hypothesis can therefore not be rejected and it appears that there is no difference between boys and girls with regard to the interaction between home environment and academic performance.

5.5.4 Hypothesis 4

With regard to hypothesis 4, as stated in paragraph 4.2.4, the following null hypothesis was tested:

There is no significant difference between the academic results of secondary school children who live permanently with both parents and those who do not live permanently with both parents.

All 284 learners were used to test this hypothesis. The average academic results for each group were then calculated and the t-test was used to determine whether the two groups of learners (learners who live permanently with both parents and learners who do not live permanently with both parents) differ significantly.

The results of the t-test can be seen in table 5.8.

TABLE 5.8 : T-TEST FOR INDEPENDENT SAMPLES OF LEARNERS LIVING PERMANENTLY WITH BOTH PARENTS AND THOSE WHO DO NOT LIVE PERMANENTLY WITH BOTH PARENTS.

	Number of learners	Mean	Standard Deviation
Yes	145	45.7133	8.718
No	139	46.3066	8.348
<p>t-value : 0.58</p> <p>df : 278</p> <p>2 tail significance : 0.562</p> <p>P > 0.05</p>			

Table 5.8 indicates that there is no significant difference between the mean of the academic results of the testees who are living permanently with both parents and those who do not live permanently with both parents. The null hypothesis cannot

therefore be rejected.

5.5.5 Hypothesis 5

With regard to hypothesis 5, as stated in paragraph 4.2.5, the following null hypothesis was tested:

There is no significant difference between the average academic results of a secondary school child whose mother is employed full time and one whose mother is not employed full time.

284 learners were used to test this hypothesis. The average academic result for each group was then calculated and t-test was used to determine whether the two groups (learners whose mothers are employed full time and those whose mothers are not employed full time) differ significantly.

The results of the t-test can be seen in table 5.9.

TABLE 5.9 : NUMBER OF LEARNERS WHOSE MOTHERS ARE EMPLOYED FULL TIME, AND THOSE WHOSE MOTHERS ARE NOT EMPLOYED FULLTIME

	Number of learners	Mean	Standard Deviation
Yes	123	46.1707	8.325
No	161	45.8726	8.710
<p>t-value : 0.29</p> <p>df : 278</p> <p>2 tail significance : 0.772</p> <p>p > 0,05</p>			

Table 5.9 indicates that there is no significant difference between the mean of the academic results of the testees whose mother is employed full time and those whose mother is not employed full time. Therefore the null hypothesis cannot be rejected.

5.6 Factor analysis

A factor analysis was carried out based on the Chronbach alpha coefficient values and two factors were found to exist instead of the proposed three. After analysing the items themselves it was decided that the first factor would be labelled family support and communication and the second was one of the original factors, namely physical living conditions.

The items included in each of the factors were as follows: family support and communication: q1, q2, q4, q5, q7, q8, q11, q14, q16, q17, q19, q23 and q29. Physical living conditions: q3, q6, q9, q12, q15, q18, q21, q24, q30.

5.7 Item analysis

An item analysis was carried out on the factor, family support and communication, see table 5.10. The reliability of this factor was found to be 0,7432, see table 5.10.

TABLE 5.10 ITEM ANALYSIS FOR HEQ: FAMILY SUPPORT AND COMMUNICATION

Number of learners	:	284
Number of items	:	13
Alpha reliability coefficient	:	0.7432
Median	:	61
	Corrected Item- Total Correlation	Alpha if Item Deleted
Q1	.4299	.7201
Q2	.3071	.7337
Q4	.4805	.7136
Q5	.5174	.7131
Q7	.3524	.7290
Q8	.4127	.7225
Q11	.4298	.7201
Q14	.2623	.7406
Q16	.2875	.7365
Q17	.3647	.7281
Q19	.3441	.7303
Q23	.2759	.7379
Q29	.3307	.7321

An item analysis was also carried out on the factor: physical living conditions, see table 5.11. The reliability of this factor was found to be 0,3478.

TABLE 5.11 ITEM ANALYSIS FOR HEQ: PHYSICAL LIVING CONDITIONS CONDITIONS

Number of learners	:	284
No of items	:	9
Alpha reliability coefficient	:	0,3478
Median	:	35
	Corrected Item- Total Correlation	Alpha If Item Deleted
Q6	.1498	.3140
Q9	.1117	.3347
Q12	.1997	.2868
Q15	.0054	.3943
Q18	.1250	.3258
Q21	.2460	.2667
Q24	.2230	.2753
Q30	.2049	.2849
RQ3	.0354	.3862

In the further refinement of this questionnaire for possible future use, certain items were left out in the new factors.

Possible reasons for the selection of these items are as follows:

Question 10 was believed to be contentious or not clear. In Question 13, it might not be all family members who have conflict among themselves. Question 20 could be counter productive. Question 22 is not entirely related to either of the two sub-sections. Question 25 is not entirely relevant, and not clear whether reference is made to parents or family. Question 26 and 27 are ambiguous, they could be good or bad and question 28 is confusing, it might not be all of them.

It was then decided to test two further hypotheses based on the two new factors.

5.7.1 Hypothesis 1b

There is a significant difference between the average academic results of secondary school children from positive home environments and those from negative home environments, with home environment referring specifically to family support and communication.

The following null hypothesis was tested:

There is no significant difference between the average academic results of secondary school children from positive home environments and those from negative home environments, with home environment referring specifically to family support and communication.

The total score was calculated for all the items of family support and communication for each testee. The median of the score was used as a dividing factor with which to differentiate between positive and negative home environments. Scores above the median of 61 were indicative of a positive home environment. The average academic results for each group were then calculated and the t-test was calculated for the two groups. The results of the t-test can be seen in table 5.12.

TABLE 5.12 : RESULTS OF THE T-TEST: FAMILY SUPPORT AND COMMUNICATION

Sum of HEQ: family support and communication	Number of learners	Mean	Standard Deviation
<= 61	139	45.0791	8.315
> 61	141	46.9149	8.668
t-value : 1.81 df : 278 2-tail significance : .072 P > 0.05			

Table 5.12 indicates that there is no significant difference. The null hypothesis cannot be rejected. This means that there is no significant difference between the average academic results of

secondary school children from positive home environments and those from negative home environments, with home environment referring specifically to family support and communication.

5.7.2 Hypothesis 1b

There is a significant difference between the average academic results of secondary school children from positive home environments and those from negative home environments, with home environment referring specifically to physical living conditions.

The following null hypothesis was tested:-

There is no significant difference between the average academic results of secondary school children from positive home environments and those from negative home environments, with home environment referring specifically to physical living conditions.

The total score was calculated for all the items of physical living conditions for each testee. The median of the score was used as a dividing factor with which to differentiate between positive and negative home environments. Scores above the median of 35 were indicative of a positive home environment, and the scores below and equal to the median of 35 were indicative of a negative home environment. The average academic results for each group were then calculated and the t-test was calculated for the two groups. The results of the t-test can be seen in table 5.13

TABLE 5.13 RESULTS OF THE T-TEST: PHYSICAL LIVING CONDITIONS

Sum of HEQ physical living conditions	Number of leaners	Mean	Standard Deviation
<= 35	161	45.0745	8.372
> 35	119	47.2605	8.613
<p>t-value : 2.13</p> <p>df : 278</p> <p>2-tail significance : .034</p> <p>P < 0.05</p>			

Table 5.13 indicates that there is a significant difference between the two groups. The null hypothesis can therefore be rejected. This means that physical living conditions do play a significant role in the academic results of learners.

5.8 Summary of results

The following conclusions were arrived at after the testing of the hypotheses:

- * There is a significant difference between the average academic results of secondary school children from positive home environments and those from negative home environments. It was also found that there is a significant difference between the average academic results of secondary school children with specific regard to physical living conditions.

- * A significant difference was also found between the average academic results of secondary school children who are 19 years and younger and those who are above 19 years of age, with regard to both negative home environments and positive home environments. It was found that there is a significant difference between the learners who are 19 years and below, and come from a positive home environment and those who are above 19 years of age and come from a negative home environment. A significant difference was also found between the learners who are 19 years and younger and come from a negative home environment and those who are above 19 years of age, and come from a positive home environment.

- * It could be said that the home environment does not affect learners who are 19 years and younger as much as it affects those who are older than 19 years of age in terms of academic performance. It could also be said that age plays a role in academic performance in general in that younger learners tend to achieve better results than older learners in a standardised school environment.

- * Boys and girls do not differ significantly with regard to the interaction between home environment and academic results.

- * It was found that there is no significant difference between the average academic results of secondary school children who live permanently with both parents and those who do not live permanently with both parents.

- * A significant difference was also not found between the average academic results of secondary school children whose mother is employed full time and those whose mother is not employed full time.

This chapter outlined the results of the empirical investigation. The following chapter will offer educational implications of the research and suggestions for further research.

CHAPTER 6

EDUCATIONAL IMPLICATIONS OF THE RESEARCH AND SUGGESTIONS FOR FURTHER RESEARCH

6.1 Introduction

As stated in chapter 1, academic performance is of major importance for the child, as much of his future success and happiness is dependent on it. A number of factors which may have an effect on academic performance were mentioned, namely, heredity, environment, parental role, general background characteristics, achievement orientation and self esteem. However, the focus of this study was on the influence of the home environment. It appeared that a negative home environment would lead to poor academic results.

It was the purpose of this study to determine whether home environment plays a significant role in the child's academic performance or not.

A literature study was done to identify the major aspects of home environment which may have an influence on academic performance. The main aspects of the home environment were identified as being physical living conditions, family factors, language development, cultural background, parental influence, involvement and attitude, parental educational styles, parent-child relationship as well as family lifestyles.

A study of the relevant literature with regard to academic

performance revealed that it could be viewed as representing both intelligence and cognition. Gupta (1993:9) referred to academic performance as "The knowledge attained or skill developed in school subjects, usually designated by test scores, or marks assigned by the teacher."

An empirical investigation was then carried out with the following goals:

- * To determine whether there is a significant difference between the average academic results of secondary school children from positive home environments and those from negative home environments.
- * To develop a measuring instrument (HEQ) with which a secondary school pupil's home environment could be evaluated.
- * To determine whether there is a significant difference between the average academic results of secondary school children who are 19 years and younger and those who are above 19 years of age, based on the results of the HEQ.
- * To find out whether there is a significant difference between the average academic results of secondary school boys and girls with regard to their home environment.

- * To find out whether there is a significant difference between the average academic results of secondary school children who live permanently with both parents and those who do not live permanently with both parents.

- * To determine whether there is a significant difference between the average academic results of secondary school children whose mother is employed full time and those whose mother is not employed full time.

6.2 Results and educational implications

6.2.1 Home environment and its influence on academic performance

Steckman (1988:3) studied parent and home variables which affect student achievement. He found that family background, parental expectation, parental participation, and the student's own attitude all played major roles in determining academic success.

Astone and McLanahan (1991:309) examined the relationship between family structure and children's achievement in high school. Their findings were that "Children who live with one parent during adolescence receive less encouragement and less help with school work than children who live with both parents."

The results of the current investigation confirm that the home environment does have a significant effect on academic

performance. The pupil who comes from a positive home environment is likely to perform better academically than a pupil who comes from a negative home environment. This has implications for both parents and teachers.

6.2.1.1 The role of parents

The literature reveals that in the past, the parents' genetic contribution to their children's intelligence as expressed in the intelligence quotient (IQ) was emphasized. Recently the role of parents as active facilitators of children's cognitive development has gained interest (Okagaki and Sternberg 1991:122).

The following ideas regarding the development of a home environment more conducive to better academic performance, may be of assistance to parents:

- * Creating a warm and accepting family environment which will in turn stimulate the child, and allow him to participate in various challenging activities.

- * Stability and constancy in the child's home environment are also considered to be major factors in the child's development. Parents should be very aware of the fact that marital strife, divorce, changing of schools or homes, may all have an effect on the emotional stability of the child.

- * Parental involvement and attitude is considered to be a critically important component in children's educational and cognitive development. Parents should note that they can influence their children directly or indirectly without being fully aware of it.
- * Consistency in child rearing practices, such as discipline and punishment, is associated with positive developmental outcomes in children.
- * The relationship between the child and his parents forms an anchorage point for the forming of further relationships. Parents should be aware that the way the child is treated and valued at home will determine the development of his sense of competence and self-worth.
- * An approach which focuses on parents may be developed where the above issues could be addressed. Such a method may include frequent parent contact through meetings on a monthly or quarterly basis, as well as parenting information through workshops and articles.

6.2.1.2 The role of teachers

The current South African education system has for the first time, made a strong link between teachers, parents and learners. The questionnaire could be administered in the early phase of secondary school education. The teacher will then become aware

of the child's problem areas before they begin to retard his progress when he advances to higher grades.

The teacher's awareness of families from a lower socio-economic level as well as those from poor home environments is of importance. Children from such families can be assumed to be disadvantaged in as far as knowledge and or development is concerned. Being aware of the situation, the teacher can then communicate with the child's parents in order to help the child. The teacher can also design activities which will cater for the above mentioned shortcomings.

6.2.2 The influence of age on academic performance

Yore (1984:745) reported that "age has traditionally been accepted as a significant factor affecting achievement regardless of content, topic of instruction and method used".

In this investigation, four groups of learners were identified: learners who are 19 years of age and younger and have a negative home environment based on the results of the HEQ; learners who are 19 years and younger and have a positive home environment based on the results of the HEQ; learners who are older than 19 years of age and have a negative home environment based on the results of the HEQ; and learners who are older than 19 years of age and have a positive home environment based on the results of the HEQ.

This study confirmed that there is a significant difference between average academic results of the four groups. Learners should be encouraged to complete their studies as soon as possible. Delays and breaks may lead to poor performance academically.

6.2.3 The influence of gender (boys and girls) on academic performance

According to Kfir (1988:218) "When school adaptation is judged by marks and teacher evaluation, girls are consistently at an advantage. At a certain point, usually in high school, the boys overtake the girls (except in the verbal field where girls remain superior)."

The following four groups were identified in this study: secondary school boys who come from a negative home environment based on the results of the HEQ; secondary school boys who come from a positive home environment based on the results of the HEQ; secondary school girls who come from a negative home environment based on the results of the HEQ; secondary school girls who come from a positive home environment based on the results of the HEQ. No significant difference was found between the average academic results of the four groups, implying that gender does not play a significant role in academic performance.

6.2.4 The influence of living at home with both parents on academic performance

Weisner and Garnier (1992:605) found that although children from non-conventional families are at risk academically, many of the associated problems can be addressed and minimised.

This study found that there was no significant difference between the academic results of those children who lived at home with both parents and those who did not.

6.2.5 The influence of mother's employment on academic performance

Zimble and Ortlepp (1996:9) found that maternal employment status was unrelated to scholastic achievement, and this was confirmed by the current study.

6.3. Evaluation of the research

6.3.1 Introduction

The principal aim of this study was to provide an answer to the problem identified in chapter 1, namely, "Does the home environment have a significant influence on academic performance?"

This question was answered in that the results of the empirical investigation confirmed that a negative home

environment will hamper a child's academic performance.

It was also found that age plays a role in academic achievement in that learners over the age of 19 achieve significantly poorer academic results.

The difference between secondary school boys and girls with regard their home environment, the influence of living at home with both parents and the influence of the mother's full-time employment were found to have no significant influence on academic performance.

6.3.2 Further contributions of the research

A number of further contributions to research in this field were made:

- * A measuring instrument was specifically developed with two subsections, namely physical living conditions and family support and communications.
- * This research was conducted in a rural area of Siyabuswa. As a limited amount of research has been conducted specifically in this area, this can serve as a framework for future use.
- * A better understanding of the major aspects of home environment and factors relating to academic performance was arrived at.

6.4 Problematic aspects of the study

- * The fact that a relatively small sample was used in the empirical investigation tends to limit the validity of the results.
- * It is very difficult to assess whether all the learners interpreted all the items correctly.
- * It is also difficult to assess whether learners answered the questions honestly.
- * The fact that the questionnaire was in English and the majority of the testees were not mother-tongue English speakers may have affected the reliability.

6.5 Recommendations for further research

- * The empirical investigation was only carried out on grade 12 pupils. The questionnaire could be administered to other grades below grade 12.
- * The investigation was conducted using only pupils from Siyabuswa, a village in Mpumalanga province. The same empirical investigation could be done using pupils from urban areas in order to compare the results.
- * Although the sample contained a cross section of cultures and language groups, Ndebele and Northern

Sotho were the dominating groups. A further investigation could be conducted consisting of equal representation of cultures and language groups.

- * The questionnaire covered mainly three aspects of the home environment, namely family lifestyle, parental involvement and attitude and physical living conditions. The same questionnaire could be enlarged and developed to cover further aspects of the home environment.

- * The HEQ could be translated into other languages.

APPENDIX A

QUESTIONNAIRE

READ THE FOLLOWING INSTRUCTIONS CAREFULLY

1. This is not a test, there are no "right" or "wrong" answers.
2. Try to be as honest with yourself as possible.
3. Read each item carefully and do not leave any items out.
4. For each item the following scale is used :-
Never 1 2 3 4 5 6 Always

In section B Choose the number which is closer to your own views. A choice of 6 implies that you agree fully with the statement. A choice of 4 or 5 will indicate that you agree while a choice of 2 or 3 will indicate that you disagree.

5. Work quickly.
6. Follow all the instructions carefully.

7. If you are unsure about an item, ask the supervisor to explain it to you.
8. The information you provided will be kept confidential.
9. Thank you for your co-operation, you may begin.

FOR OFFICE USE
ONLY

SECTION A : BIOGRAPHICAL DETAILS _____ 1-3

1. SURNAME: _____ NAME: _____ 4

2. PLEASE CROSS THE OPTION THAT APPLIES TO YOU:

2.1 NAME OF SCHOOL : SCIENCE SCHOOL = 1 _____ 5

SOBANTU SCHOOL = 2 _____

SOMKHAHLEKWA SCHOOL = 3 _____

BONGINHLANHLA SCHOOL = 4 _____

2.2 GENDER : MALE = 1 _____ FEMALE = 2 _____ 6

3. FILL IN THE INFORMATION IN THE SPACE PROVIDED

* Age in years _____ 7-8

* How many siblings _____ 9-10

* What is your mother tongue _____ 11

4. Please cross the option that applies to you.

YES NO

* Do you live with both your parents
permanently? 1 2 _____ 12

* Is your mother employed full time? 1 2 _____ 13

SECTION B

FOR EACH ITEM THE FOLLOWING SCALE IS USED:

NEVER 1 2 3 4 5 6 ALWAYS

CHOOSE THE NUMBER WHICH IS CLOSEST TO YOUR OWN VIEWS. A CHOICE OF 6 IMPLIES THAT YOU AGREE FULLY WITH THE STATEMENT. A CHOICE OF 4 OR 5 WILL INDICATE THAT YOU AGREE WHILE A CHOICE OF 2 OR 3 WILL INDICATE THAT YOU DISAGREE.

	NEVER		ALWAYS					
1. My family does things together.	<u>1</u>	2	3	4	5	6	___	14
2. My parents reward my success at school.	<u>1</u>	2	3	4	5	6	___	15
3. My family moves from one house to another.	<u>1</u>	2	3	4	5	6	___	16
4. My family support each other during difficult times.	<u>1</u>	2	3	4	5	6	__	17
5. My parents are concerned about my progress at school.	<u>1</u>	2	3	4	5	6	___	18

6. Boys and girls share different
bedrooms at home. 1 2 3 4 5 6 — 19
7. In my family it is easy for me
to express my opinion. 1 2 3 4 5 6 — 20
8. My parents respect my point of
view. 1 2 3 4 5 6 — 21
9. Our house has electricity. 1 2 3 4 5 6 — 22
10. In my family children have a say
in their discipline. 1 2 3 4 5 6 — 23
11. My parents participate actively
in my educational activities. 1 2 3 4 5 6 — 24
12. I have a specific study room to
study in. 1 2 3 4 5 6 — 25
13. There is conflict between my
family members. 1 2 3 4 5 6 — 26
14. I discuss my homework with my
parents. 1 2 3 4 5 6 — 27

15. Our house has running water. 1 2 3 4 5 6 — 28
16. In my family everybody shares
responsibility. 1 2 3 4 5 6 — 29
17. My parents expectations of me
are clear. 1 2 3 4 5 6 — 30
18. I have access to television set. 1 2 3 4 5 6 — 31
19. My parents share family history
with all the siblings. 1 2 3 4 5 6 — 32
20. My parents encourage independence. 1 2 3 4 5 6 — 33
21. The room in which i study is far
from noise. 1 2 3 4 5 6 — 34
22. My family treats me as an
individual. 1 2 3 4 5 6 — 35
23. I tell my parents when
my performance is poor. 1 2 3 4 5 6 — 36

24. Reference books such as dictionaries
are available at home. 1 2 3 4 5 6 ___ 37
25. There are topics that I avoid
discussing with my family. 1 2 3 4 5 6 ___ 38
26. I feel that my parents'
expectations of me are too high. 1 2 3 4 5 6 ___ 39
27. There are restrictions on the
amount of time I have for
recreation. 1 2 3 4 5 6 ___ 40
28. The relationships between my
family members are poor. 1 2 3 4 5 6 ___ 41
29. My parents check on my behaviour
at school. 1 2 3 4 5 6 ___ 42
30. I use a desk for my written work
at home. 1 2 3 4 5 6 ___ 43

NEVER

ALWAYS

 END OF THE QUESTIONNAIRE

GRADE 11 FINAL RESULTS (1996)

<u>SURNAME</u>	<u>NAME</u>	<u>INITIALS</u>	<u>1</u>
<u>STUDENT'S NUMBER:</u>		_____	2-4
1. NOTHERN SOTHO		_____	5-6
2. ZULU		_____	7-8
3. NDEBELE		_____	9-10
4. AFRIKAANS		_____	11-12
5. ENGLISH		_____	13-14
6. MATHEMATICS		_____	15-16
7. PHYSICAL SCIENCE		_____	17-18
8. BIOLOGY		_____	19-20
9. AGRICULTURE		_____	21-22
10. HISTORY		_____	23-24
11. GEOGRAPHY		_____	25-26
12. BIBLICAL STUDIES		_____	27-28
13. ACCOUNTING		_____	29-30
14. BUSINESS ECONOMICS		_____	31-32
15. ECONOMICS		_____	33-34
AVERAGE		_____	35-36

BIBLIOGRAPHY

Astone, N.M. & McLanahan, S.S. 1991. Family structure, parental practices and high school completion. American Sociology Review. 56: 309-320.

Bartz, D.E. & Maehr, M.L. 1984. The Effects of School Desegregation on Motivation and Achievement. Greenwich: Jai.

Battle, J. 1982. Enhancing Self Esteem and Achievement. Seattle: Special Child Publication.

Baldwin, A.L. 1980. Theories of Child Development. 2nd edition. New York: John Wiley and Sons.

Belkin, G.S. & Gray, J.L. 1977. Instructor's resource manual to accompany educational psychology : an introduction. Educational Psychology. 1977: 108.

Berg, A.S. 1990. The Relationship Between Self Concept, Family Factors and Academic Achievement. Unpublished masters dissertation. University of the Witwatersrand.

Bisanz, J., Morrison, F. J. and Dunn, M. 1995. Effects of age and schooling on the acquisition of elementary quantitative skills. American Psychology Association. 31(2): 221-236.

Bloom, B.S. 1964. Stability and Change in Human Characteristics. New York: John Wiley & Sons.

Bloom, L. & Lahey, M. 1978. Language Development and Language Disorders. New Jersey: John Wiley & Sons.

Bradley, R.H., Caldwell, B.M. & Rock, S.R. 1988. Home environment and school performance : a ten year follow-up and examination of three models of environmental action. Child Development. 59: 852-867.

Brierly, J.K., 1976. The Growing Brain: Childhood's Crucial Year. New York: Humanities Press.

Bruner, J.S., Olver, R.R., Greenfield, P.M. & Hornsby, P.M. 1966. Studies in Cognitive Growth. A Collaboration of the Center for Cognitive Studies. New York: John Wiley and Sons.

Cherian, V.I. 1991. Relationship between size of broken and intact families and academic achievement. Journal of Social Psychology. 131(1): 125-127.

Clark-Lempers, D.S., Lempers, J.D. and Netusil, A.J. 1990. Family Financial Stress, Parental Support, and Young Adolescents' Academic Achievement and Depressive Symptoms. Pennsylvania: Sage Publications.

Clarke-Stewart, K.A. 1989. Single parent families: how bad for the children? NEA-Today. 7(6): 60-64.

Comer, J.P. 1984. Home school relationship as they affect the academic success of children. Education and Urban Society. 16: 323-337.

Concise Oxford Dictionary Of Current English. 1995. Edited by D. Thompson. Oxford: Clarendon Press.

Dasen, P.R. (ed). 1977. Piagetian Psychology. New York: Gardner Press.

Davis, A.K. 1994. The Self Concept of the Junior Primary School Child With Learning Disabilities. Unpublished masters dissertation. University of South Africa.

Diaz-Soto, L. 1989. Relationship between home environment and intrinsic versus extrinsic orientation of higher achieving and lower achieving Puerto Rican children. Educational Research Quarterly. 13(1): 22-36.

Dienaar, M.J.L. 1994. The Relationship Between the Family Interaction and School Achievement of Adolescent Boys. Unpublished masters dissertation. University of South Africa.

Dornbusch, S.M., Ritter, P.L., Leiderman, P.H., Roberts, D.F. & Fraleigh, M.J. 1987. The relation of parenting style to adolescent school performance. Child Development. 58: 1244-1257.

Featherstone, D.R, Cundick, B.P. & Jensen, L.C. 1992. Differences in school behavior and achievement between children from intact, reconstituted, and single parent families. Adolescence. 27(105): 2-12.

Fehrmann, P.G., Keith, T.Z. & Reimers, T.M. 1987. Home influence and school learning : direct and indirect effects of parental involvement on high school grades. The Journal of Educational Research. 80(6): 330-337.

Ford, D.Y. 1993. Black students' achievement orientation as a function of perceived family achievement orientation and demographic variables. Journal of Negro Education. 62 (1): 47-66.

Gaspard, M. & Burnett, M. 1991. The relationship between self esteem and academic achievement of rural ninth grade students. Journal of Rural and Small Schools. 4(3): 2-9.

Gerdes, L.C., Moore, C., Ochse, R. & Van Ede, D. 1989. The Developing Adult. Durban: Butterworths.

Granowsky, A. 1991. What parents can do to help children succeed in school. PTA-Today. 17(1): 5-6.

Grolnick, W.S. & Ryan, R.M. 1989. Parent styles associated with children's self regulation and competence in school. Journal of Educational Psychology. 81(2): 143-154.

Gupta, M. 1993. Determinants of Academic Achievement. New Delhi: Intellectual Publishers.

Halford, G.S. 1982. The Development of Thought. Hillsdale, N.J. Lawrence Erlbaum Associates.

Hamachek, D.E. 1979. Psychology in Teaching, Learning, and Growth. 2nd edition. Boston: Allyn and Bacon.

Hamilton, V. & Vernon, M.D. 1976. The Development of Cognitive Processes. Boston: Academic Publishers.

Hitchcock, D.C. & Oliver, L. I. 1976. Intellectual development and school achievement of youths 12 - 17 years: Demographic and socio-economic factors. Vital and Health statistics. 11(158): 320-349.

Jubber, K. 1989. The home and family environment and its impact on school performance. The South African Journal of Sociology.

21(1): 1-11.

Keeves, J.P. 1972. Educational Environment and Student Achievement = A Multivariate Study of the Contributions of the Home, the School and the Peer Group to Change in Mathematics and Science Performance During the First Year at Secondary School. Stockholm: Almqvist & Wiksell.

Kfir, D. 1988. Achievements and aspirations among boys and girls in high school: A comparison of two Israeli ethnic groups. American Educational Research Journal. 25(2): 213-236.

Kurdek, L.A. & Sinclair, R.J. 1988. Relation of eighth graders' family structure, gender and family environment with academic performance and school behaviour. Journal of Educational Psychology. 80(1): 90-94.

Lamborn, S.D., Mounts, N.S., Steinberg, L. & Dornbusch, S.M. 1991. Patterns of competence and adjustment among adolescents from authoritative, authoritarian, indulgent and neglectful families. Child Development. 62(5): 1049-1065.

Lau, S. & Leung, K. 1992. Relation with parents and school and Chinese adolescents' self concept, delinquency, and academic performance. British Journal of Educational Psychology. 62(2): 193-202.

Lenyai, E.L .1991. The Relation Between the Pre-schooler's Home Environment and Delayed Language Acquisition. Unpublished masters dissertation. University of South Africa.

Lockheed, M.E., Fuller, B. & Nyirongo, R. 1988. Family effects on student's achievement in Thailand and Malawi. Sociology of Education. 62: 239-256.

Marjoribanks, K. 1983. The relationship of adolescents' perceptions of family environments to earlier measures of environmental charecteristics and academic achievement. Educational and Psychological Measurement. 43: 1153-1162.

Marsh, H.W. 1990. Two parent, stepparent, and single-parent families: changes in achievement, attitudes, and behaviors during the last two years of high school. Journal of Educational Psychology. 82(2): 327-340.

Masilela, P.J.A. 1988. Socio-Pedagogic Description of Factors that Influence Scholastic Achievement of Secondary School Pupils in Kwa-Ndebele. Unpublished masters dissertation. University of Zululand.

Masten, A.S., Garmezy, N., Tellegen, A., Pellegrini, D.S., Larkin, K. and Larsen, A. 1988. Competence and Stress in School Children: The Moderating Effects of Individual and Family

Qualities. Great Britain: Pergamon Press.

McCartin, R. & Meyer, K.A. 1988. The adolescent, academic achievement, and college plans, the role of family variables. Youth and Society. 19(4): 378-394.

Mulder, J.C. 1989. Statistical Techniques in Education. Pretoria: Haum.

Murray, A. & Sandqvist, K. 1990. Father absence and children's achievement from age 13 to 21. Scandinavian Journal of Educational Research. 34(1): 3-28.

Mussen, P.H., Conger, J.J., Kagan, J. & Huston A.L. 1984. Child Development and Personality. New York: Harper and Row.

Ohuche, R.O. & Otaala, B. 1981. The African Child and His Environment. New York: Pergamon.

Okagaki, L. & Sternberg, R.J. (ed). 1991. Directors of Development : Influence on the Development of Children's Thinking. Hillsdale, N.J: Erlbaum Associates.

Readers Digest. 1988. Universal Dictionary. London: Readers Digest Association.

Rosa, C.M. 1994. The influence of parental involvement, discipline and choice of values on the scholastic achievement of secondary school pupils, with special reference to the role of the father. Unpublished masters dissertation. University of South Africa.

Rudolph, M. & Cohen, D.H. 1984. Kindergarten and early schooling. 2nd ed. Englewood Cliffs, N.J: Prentice-Hall.

Rumberger, R.W., Ghatak, R., Poulos, G., Ritter, P.L. & Dornbusch, S. M. 1990. Family influences on dropout behavior in one carlifornia high school. Sociology of Education. 3(4) 283-299.

Sarafino, E.P. & Armstrong, J.W. 1980. Child and adolescent development. Dallas: Scott, Foresman and Company.

Seifert, K.L. & Hoffnug, R.J. 1987. Child and adolescent development. Boston: Houghton Mifflin.

Sithole, K.E. 1993. The Effects of Parental Involvement on Scholastic Achievement at Elementary School Level. Unpublished masters dissertation. University of South Africa.

Smith, R.W. 1988. Twelve tips to help your child to succeed at school. Journal for Technichal and Vocational Education in South Africa. 120: 15.

Steckman, M. 1988. An ecology of society : Parent and home variables which affect student achievement. International Journal of Educology. 2(1): 1-16.

Stevenson, B.W., Roscoe, B. & Kennedy, D. 1988. Perceptions of conventional war: Late adolescents' views. Adolescence. 23(91): 613-627.

Sumner, R. 1974. Looking at School Achievement. Windsor : NFER.

Thompson, M.S., Alexander, K.L. & Entwisle, D.R. 1988. Household composition, parental expectations, and school achievement. Social Forces. 67(2): 324-451.

Tlale, C.C.M. 1991. The causes of scholastic under-achievement. Educamus. 37(5): 16-18.

Tomlinson-Keasey, C. 1985. Child Development. Home Wood: The Dorsey.

Van den Aardweg, E.M. & Van den Aardweg, E.D. 1988. Dictionary of Empirical Psychology / Educational Psychology. Pretoria: E &

E Enterprises.

Van der Spuy, C.M. 1992. The Actualisation of the Child Restrained in his Becoming. Unpublished masters dissertation. University of South Africa.

Vos, M.S. 1991. Parental educational styles. Paidonomia. 17(2): 34.

Vrey, J.D. 1979. The Self Actualising Educand. Pretoria: University of South Africa.

Wadkar, A.J. 1982. Role of Home Background in Academic Achievement. Pune: Dastane Ramchandra.

Watts, D.S. & Watts, K.M. 1991. The impact of female-headed single parent families on academic achievement. Journal of Divorce and Re-marriage. 17(1): 97-114.

Webber, C.F. 1988. The family factor. ATA Magazine. 68(3): 8-10.

Weisner, T.S. & Garnier, H. 1992. Non-conventional family lifestyles and school achievement : A 12-year longitudinal study. American Educational Research Journal. 29(3): 605-632.

Wilson, N.O. 1992. Optimizing Special Education : How Parents Can Make a Difference. New York: Insight Books.

Wilson, P.M. & Wilson, J.R. 1992. Environmental influences on adolescent educational aspirations: A logistic transform model. Youth and Society. 24(1): 52-70.

Wiseman, S. 1964. Education and Environment. Manchester: Manchester University.

Yore, L.D. 1984. The effects of cognitive development and age on elementary students' science achievement for structured inductive and semi-inductive inquiry strategies. Journal of Research in Science Teaching. 21(7): 745-753.

Zimble, Y.N. & Ortlepp, K. 1996. The relationship between marital employment status, marital employment experience and children's scholastic achievement. South African Journal of Education. 16(1): 9-15.