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**CHARACTERISTICS OF
LEARNERS AND PARENTS AS PREDICTORS
OF HIGH SCHOOL PASS RATES**

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DECLARATION

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YVETTE CALITZ

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GENERAL ORIENTATION

*'The answer to a land's problems can be summarised into one word
- that being education.'*

President Lyndon Johnson

1.1 INTRODUCTION

Achieving well academically is a very important aspect for any learner. This is especially so for learners in grade 12, as decisions regarding their futures are often based on their scholastic achievements. Those learners who manage to obtain a matric exemption are able to continue studying at a tertiary level, while those who do not achieve as well, or even fail the examination, are forced to enter the working world with a definite deficit in this respect. The problem is however, that performing well academically is not always an easy task, the reason being that there are a number of determining factors, both positive and negative, that play a role in the level of achievement that a learner will attain.

1.2 STATEMENT OF THE PROBLEM

There is to date a limited amount of information available, which focuses on the factors that influence academic achievement of black secondary school learners in South Africa, and more specifically, in the Free State.

In South Africa the matric pass rates have, over the last few years, been a great source of distress. The average end-of-year pass rate of the grade 12's in the Free State was 43,4%, in 1998, while in 1999 the figure dropped to 42,1% (Coetzee, 2000). This is a rather shocking statistic.

In order to prevent this pass rate from dropping lower, it was decided in 1999 to introduce a "common" June examination, written by all grade 12 learners in the Free State. The purpose of this was to draw attention to and identify those learners who were struggling, and who were expected to encounter further difficulties in the end-of-year examination. This could then, in turn, enable teachers to give additional assistance to the identified learners, providing them with a better chance of succeeding in the examinations at the end of the year. This examination proved to be useful in warning educators of impending problems, as the results hereof showed a pass rate of only 29,1% (Coetzee, 2000).

The low matric pass rates obtained further influence South Africa as a whole, in that these low pass rates may result in higher unemployment rates. This is clear from the fact that the future of the learner who does not obtain a matric pass is greatly impaired, as the number of options, with respect to tertiary education, may be greatly diminished. This individual then has a decreased chance of finding employment later in life. The reality is that even successful matriculants will find it difficult to find employment in South Africa. It was estimated that only 10% of matriculants would find work in the formal sector in 1999 ("Min matrieks, 1998"), a statistic which highlights the plight of those learners who do not succeed in passing grade 12.

Taking the above-mentioned into consideration, as well as the fact that South Africa spends approximately R5 billion a year on higher education, in a sector accommodating more than 400 000 employees (RDP Monitor, 1996), it is essential that the overall educational situation in South Africa be improved.

It must however also be kept in mind that the education situation in South Africa is very different from that in the rest of the world. For this reason the research done in other parts of the world, as well as the solutions that sprout from the research, is often not

applicable to South African circumstances. There are a number of factors that contribute to the poor state of education in South Africa, which differentiates it from other parts of the world. Amongst these are the heritage of under-qualified teachers, shortage of resources, lack of discipline and a lack of a so-called "learning culture" amongst the learners and teachers in South African schools. ("Bruin, swart presteeders", 1999). Another aspect that differentiates the South African education situation from that of other countries is the fact that many of the learners have repeated grade 12 up to three times, making the average age of this group much higher than is expected in other countries. The learners in South Africa are also often not well versed in English, the chosen medium of instruction in most schools (Smith, 1999). Teachers in South African schools also play a role in that teachers have been found to have a very negative attitude towards teaching. In the "Education for All – 2000 Report", it was stated that approximately 24% of all teachers and about 20% of headmasters are negative about their chosen profession, and if given the chance would readily choose another career ("Talle opvoeders negatief", 1999).

All of these factors take their toll on the academic achievement of learners in South Africa, and highlight the fact that more research needs to be done on the unique circumstances surrounding education in this country. It is thus of vital importance that factors contributing to the academic achievement of learners (both positive and negative) be identified, in order to implement changes that will benefit learners in future. What will follow is a brief description of the purpose of the study as well as the methods of investigation and an overview of the factors examined.

1.3 PURPOSE OF THE STUDY

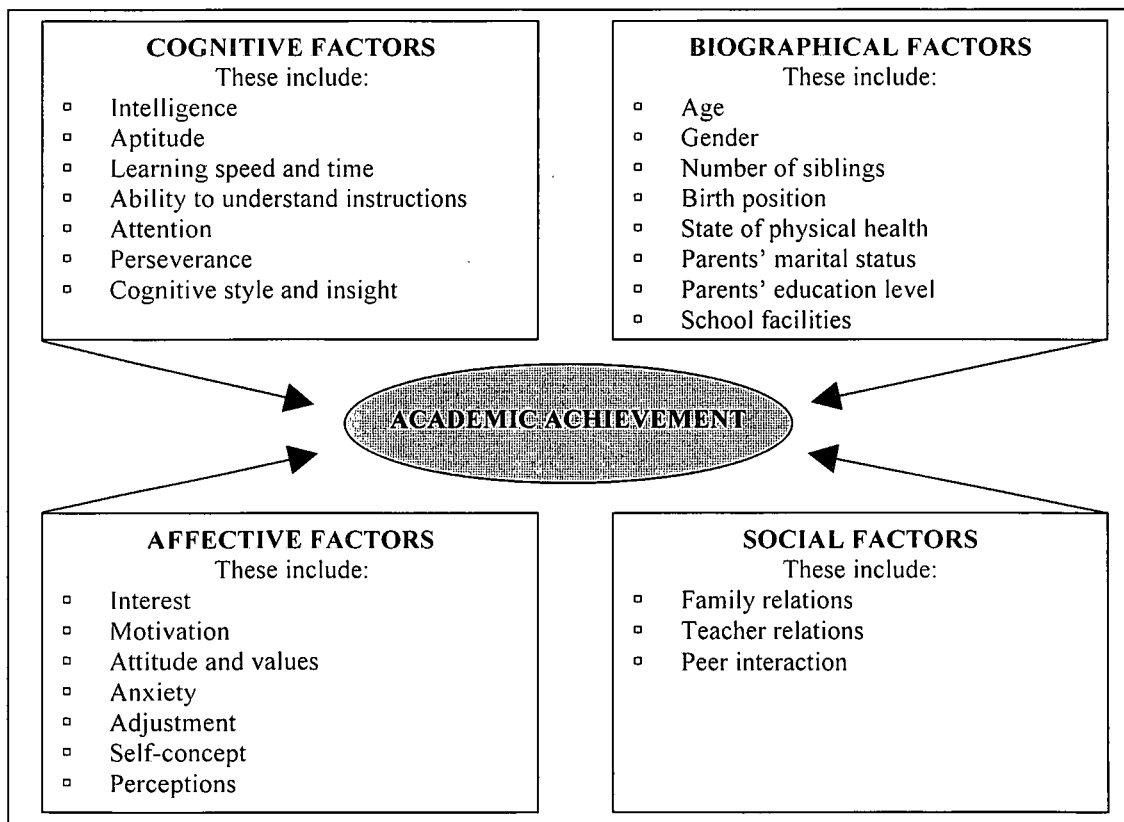
The purpose of this study will be to identify factors that influence the academic achievement of black grade 12 learners in the greater Bloemfontein area.

The factors that influence academic achievement can be divided into two broad categories, namely cognitive factors, which will include, for example, the intellectual functioning of the learner (Vrey, 1979) and non-cognitive factors (Coleman, 1998). The

latter category can further be divided into three areas, namely affective factors, social factors and biographical factors. Coleman more specifically identified three components within the larger category of non-cognitive factors, which can exercise direct influence over the academic achievement of learners. These are the learners themselves, their parents and their teachers. He is of the opinion that the perceptions of the learners and their parents, with respect to aspects such as teacher-learner interaction and parent-learner interaction, influence the learners' scholastic performance. A number of biographical factors such as gender, age, self-reported health and parental education level, to name a few, were also found to play a role in influencing the level of academic achievement that the learner attains (Van der Watt de Beer, 1980).

A graphic representation of the categories of factors, which may affect the academic achievement of a learner, as well as examples of the more specific components within these categories, is provided in figure 1.1.

Figure 1.1: Factors influencing academic achievement



Only certain factors will be investigated during the course of this study. Firstly, the aspects included in the category of “biographical factors” will be investigated, after which the categories of “affective factors” and “social factors” will be examined. The latter two areas will be combined, in that the perceptions (affective factor) related to home, school and peer relations (social factors) will be the focus of attention.

The effect of the various factors on academic achievement of learners needs to be investigated, in order to attempt to help these learners perform better academically and in so doing, enable them to build a better future for themselves. It is important that the information gained be used in such a way that changes, aimed at improving a learner’s academic performance, are implemented early in the learner’s school career, as academic achievement, whether good or bad, has a compounding effect. In other words, learners who perform poorly tend to become more and more discouraged when it comes to schoolwork, while those who achieve well continue to consolidate their gains. It is thus important that those learners, who struggle academically, be helped to perform better from the outset through improving those factors, which are found to contribute toward negative academic performance.

In order to achieve this goal, this study aims to identify factors which distinguish between groups of learners with a high grade 12 pass rate (80% or more) on the one hand, and those with a low grade 12 pass rate (50% or less) on the other. More specifically, the researcher will focus on whether or not biographical factors (of both learners and their parents) and parental and learner perceptions, with respect to schooling, contribute toward predicting the group membership of learners from schools with high and low pass rates respectively.

1.4 METHOD OF INVESTIGATION

Through an extensive survey of the literature, factors that contribute to academic achievement will be discussed. Special attention will be given to specific biographical

factors that play a role in academic achievement, as well as internal characteristics related to parents and learners.

This will be followed by empirical research within a selected research sample, comprising two groups of learners, one with a high grade 12 pass rate (80% or more) and one with a low grade 12 pass rate (50% or less), and their parents respectively. The research sample will comprise all the grade 12 learners from five schools in the greater Bloemfontein area.

The research participants (learners) will then be requested to complete a biographical questionnaire compiled by the researcher, as well as Coleman's Student Survey (1998). Their parents will be requested to complete Coleman's Parent Survey (1998). From these questionnaires, data regarding factors that could influence academic achievement will be collected, and subjected to a logistic regression analysis, in order to determine which of these factors play a significant role in predicting the group membership of learners from schools with different pass rates.

1.5 OPERATIONAL DEFINITIONS

As mentioned above, biographical considerations, as well as internal characteristics, or perceptions, of both the learner and his parents can influence academic achievement. What follows is a brief description of what is implied by the terms "academic achievement", "biographical factors" and "internal factors", respectively.

1.5.1 ACADEMIC ACHIEVEMENT

Reber (1995) defines achievement as the accomplishment or attainment of a goal, or the goal itself. He additionally defines individuals' levels of achievement as the degree to which they achieve on a standardised measure.

Academic achievement can thus be viewed as the degree to which learners are able to attain a standardised academic goal or, in other words, the degree to which learners master those tasks which they are expected to master for the respective academic year.

In this study the academic achievement of learners will be represented by the pass rates of the schools which they attend. In order to do this, two research groups will be formed, based on the matric pass rates of the respective schools. Here matric pass rate refers to the percentage of learners in the school who pass the grade 12 end-of-year examination.

1.5.2 BIOGRAPHICAL FACTORS

The biographical factors include the following details:

- Learner's age
- Learner's gender
- Number of siblings that the learner has
- Learner's birth position within the family
- Learner's self-reported state of health
- Learner's intention to study further
- Parents' marital status
- Parents' education level (father and mother)
- Parents' age (father and mother)

1.5.3 INTERNAL FACTORS

The learners' perceptions, as well as those of their parents', concerning aspects of schooling, form the core of the internal factors. The internal factors can be summarised as follows:

- Learner involvement, which includes:
 - learner – parent interaction;
 - teacher – learner interaction;

- learner motivation;
 - learner responsibility regarding academic tasks;
 - personal efficacy regarding academic tasks;
 - study methods and habits; and
 - peer group involvement.
- Parental involvement, which includes:
 - parent – child interaction;
 - parent – teacher interaction; and
 - parental expectations for their child.
 - School climate, which includes:
 - teacher – learner interaction; and
 - teacher caring.

1.6 FURTHER COURSE OF STUDY

Chapter 2 comprises a discussion of the biographical factors influencing academic achievement, as well as the interaction between these factors and others related to academic achievement, as seen in the literature available.

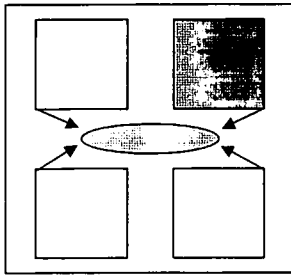
The internal factors related to learners and their parents are discussed in more detail in chapter 3, as well as the influence of these factors on one another and others related to academic achievement, as ascertained from the available literature.

Chapter 4 includes a detailed explanation of the variables measured, the measuring instruments used to obtain the data, the manner in which the data was collected, and the selection and distribution of the research sample. The research hypothesis will also be stated.

The results that were obtained from the study are discussed in Chapter 5. In addition to this, the conclusions that are reached with respect to these results, as well as the recommendations that follow, will also be explained.

1.7 SUMMARY

An explanation of the problem, as well as a short description of the factors that will be investigated, has been given in this chapter. A more detailed discussion of the relevant factors will follow. The next chapter will pay further attention to the biographical factors, which have been found by researchers and authors to exert an influence over academic achievement.



2

BIOGRAPHICAL FACTORS INFLUENCING ACADEMIC ACHIEVEMENT

*'Ah, but a man's reach should exceed his grasp,
Or what's a heaven for?'*

Robert Browning

2.1 INTRODUCTION

A number of biographical factors have been found by researchers to affect academic achievement, in some cases positively and in others negatively. These factors are often out of the learner's control, and are difficult to change in order to help the learner perform better. Fortunately there is a small amount that can be done to change some of these factors for the better, for example improving the education level of individuals and in so doing, enabling their children to benefit in future. It must however be kept in mind that many of the implementation strategies needed to better those biographical factors that influence the academic performance of individuals, will have to be long-term endeavours in order to improve their general quality of life.

The biographical factors that will be discussed in this chapter, in relation to academic achievement are:

- a) those related to the learners themselves, namely age, gender, birth position and self-reported health;
- b) those related to the learners' family, namely the composition of the family (size of the family, as well as the presence of one or both parents), the parents' education level and the parents' age; and
- c) the factors related to the school that the learner attends, namely the facilities available and the medium of instruction.

2.2 LEARNER CHARACTERISTICS

2.2.1 GENDER

There is often a distinction made between the term "sex" and "gender". Sex often refers to the biological differences that are found between males and females, while gender refers to the cultural norms, by which behaviour of an individual of the respective sex is governed (masculine vs. feminine behaviour). Often these gender-characteristic traits and norms are shaped, from a young age, by parental attitudes and behaviours (Crawford & Unger, 1995).

In this study, the researcher will use the terms sex and gender interchangeably to refer to a combination of both the biological and psychosocial aspects related to the differences found between males and females, as these two aspects of human experience are so closely linked in our society.

It has been found by a number of authors that gender differences do indeed play a role with respect to academic performance. These differences have, however, not been consistent, with certain studies finding that girls perform better academically (Fehrmann, Keith & Reimers, 1987; Van der Watt de Beer, 1980), while others favour boys (Halpern, 1986), and still others finding no significant difference between the academic achievement of individuals of different gender (Mwamwenda, 1989). Areas in which differences between girls and boys have been found to be more consistent are those which

relate to specific aspects indirectly playing a role in influencing academic achievement. This could explain the fact that different studies report different, and often contradictory results when it comes to research on the differences in performance of individuals of one gender over the other. The factors that play a role in this respect, and which will be discussed in the following sections, include achievement on different tasks, cognitive styles, sex-role influences, types of study methods used, interest and sense of self-efficacy, parental involvement and genetics.

2.2.1.1 Achievement on different tasks

The difference in performance in certain tasks, by individuals of different gender, can be seen most clearly where males are found to out-perform their female counterparts in tests of visual-spatial and quantitative (mathematical) ability, while females tend to excel more at tasks that involve the use of verbal skills (Halpern, 1986). This difference in performance can be attributed to the fact that males and females tend to process information differently, and thus perceive and prioritise this information in different ways, with the result that their behaviour will also differ. Furthermore, it is evident that girls have a biological advantage over boys when it comes to learning, which is based more on verbal ability. The reason being that learning is more reliant on the sense of hearing, in contrast to that of sight, and it is in the left hemisphere of the brain that this processing takes place, the hemisphere in which girls show a definite strength (Moir & Jessel, 1991). This difference in verbal ability can explain the fact that girls tend to perform better with respect to general academic achievement than do boys (Fehrmann et al., 1987; Van der Watt de Beer, 1980), as the general scholastic syllabus is based more often on verbal, than on mathematical and visual-spatial attributes.

Halpern (1986) further points out that, although there is no definite or visible course of development of the difference, with respect to visual-spatial or quantitative ability, between the two genders, the difference with respect to verbal ability has a clearer course of development. This gender difference in verbal ability can be seen from early childhood. During this stage the difference is only evident to a small degree, where girls, for example, begin to speak earlier than boys. This difference is later magnified and

emerges more clearly by adolescence and continues into old age. In the case of the difference in visual-spatial ability between boys and girls, it is most evident during adolescence (Crane, 1996; Ma, 1995; Skaalvik & Rankin, 1994).

In certain tasks however, no significant sex differences seem to be present, as is demonstrated in the study by Mwamwenda (1989). She found that African boys and girls performed equally well on Piagetian tasks that required the child to, 1) be able to group together certain objects on the basis of some or other characteristic (classification), and 2) to understand that when objects undergo changes of shape or form, that attributes such as length, quantity and mass remain unchanged (conservation) (Botha, Van Ede & Piek, 1991).

It can thus be concluded from the above-mentioned information, that the gender differences that are encountered with respect to general academic achievement, depend more often on the task being performed, than on the actual difference in intellectual potential of the individuals themselves.

2.2.1.2 Cognitive styles

The term "cognitive style", refers to the individual differences in modes of perceiving, remembering and thinking (Halpern, 1986). For individuals to fully develop cognitively, they need to effectively make use of all the aspects of their perceptive faculty, which will in turn lead to the development of cognitive abilities that are necessary for more specific tasks, such as problem solving, academic progress and learning (Meyer, 1991). In this cognitive development, memory too plays an important role, and since memory is the process by which an individual encodes, stores and retrieves information, it can be expected that the use of different strategies, which are preferred by the individual, will either promote or hamper this process (Shuttleworth-Jordan, 1993).

Bannister (1993) views the difference in preferences of boys and girls with respect to specific types of evaluation methods as indicative of the different cognitive styles that they make use of. She found that boys preferred and excelled at multiple choice

questions, while girls tended to perform better at and preferred answering essay-type questions and being evaluated by means of other open-ended forms of assessment. In a study by Dalton (1981), the gender differences in cognitive styles were highlighted by subjecting learners to different teaching styles, and noting how boys and girls reacted to the respective styles offered. Girls, he found, showed a strong preference for the method which required the teacher to convey a factual body of knowledge to the learners (informer style), as well as for the style in which the learners were required to investigate problems in small groups (enquirer style). They however, showed a strong dislike for the teaching method where the teacher asked a number of questions, which the learners had to answer by forming hypotheses (problem-solver style). The boys, on the other hand, showed no preferences for one teaching style above the other.

2.2.1.3 Sex-role influences

Sex-roles can play a very influential role in the development of certain cognitive abilities. An example hereof is that when boys are growing up, they identify with the notion that they should excel at mathematics, and thus often do, while girls, on the other hand, learn that mathematical ability is not an acceptable feminine trait and thus tend to avoid mathematical courses (Halpern, 1986). This sex-role stereotyping is clearly emphasised by Osen (in Halpern, p. 113), when he stated that, in his view, 'many women in our present culture value mathematical ignorance as if it were a social grace'.

Bielby and Doherty (1990) are of the opinion that the sex differences that are evidenced with respect to intellectual abilities can arise or be accentuated by sex-role biases that are embedded not only in the society as a whole, but also in the teacher's socialisation itself. This internal bias can lead the teacher to treat males and females differently within the classroom setting, and in doing so, provide boys and girls with an unequal quality of education. Often the teacher will discourage those activities which have not traditionally been prescribed for males or females respectively, and thus prevent the children from fully experiencing their learning environment. A study, in which children were observed while at elementary school, showed that boys at this level tended to receive more attention in the class from their teachers, than did the girls. This could be seen as a

promotion of unequal academic development of the learners based on their sex. These teachers themselves, however, report that they believed that they were treating the boys and girls equally (Crawford & Unger, 1995). It is thus clear that this sex-role bias is often an aspect that is not focussed on, in order to attempt to rectify it, as its existence is often not on a conscious level.

Kenway (1993) views this bias with respect to females as being present in two distinct aspects, namely the girl herself and the curriculum offered to her. When looking at the girl, it is often said that she lacks the appropriate aptitudes, attitudes and knowledge to follow so called non-traditional subjects such as mathematics and science, although when given the choice, girls were found to participate as fully and as successfully as boys do in these subjects. This is in contrast to Halpern's (1986) findings that males outperform females in tasks that require visual-spatial reasoning. This could possibly be due to the fact that in earlier years girls were discouraged from partaking in such tasks, with the result that their performance was negatively influenced by the presence of these sex-role biases. With respect to the curriculum that Kenway refers to, the argument here is that mathematics, science, technology and manual arts are seen as "masculine" subjects by society as a whole, and it is this image which tends to alienate girls and negatively influence their performance.

It is not only the influence of the teacher, but also of the individuals themselves, that plays a role in the continuing effect of sex-role bias on performance. Crawford and Unger (1995) state that gender-typing becomes part of the self-concept of the individual, as they ascribe to themselves the traits, behaviours and roles that are normative in their culture for people of their respective sex. For example, women have been found to internalise the devaluation and subordination that their culture has often prescribed for them. Grayson Kirk, a former president of Columbia University, reiterated this view, when he was quoted saying that 'it would be preposterously naïve to suggest that a B.A. degree can be made as attractive to girls as a marriage licence' (in Halpern, 1986 p. 123).

It is fortunate, however that this sex-role bias in education seems to be changing, albeit slowly. This can be seen in the fact that the White Paper on Education and Training of

South Africa (Department of Education, 1995) states that all individuals should be given the opportunity to develop their capabilities and potential, through education and training, irrespective of gender. This change towards more equality for both sexes can also be seen in that courses that were previously limited to girls, for example home economics, have been made available to both boys and girls within the school setting. Conversely, it is seen more often than before that girls are enrolling in technical and industrial courses, which were previously predominantly aimed at boys (Thomas, 1990a). In South Africa too, provision is specifically being made to accommodate and train women and girls in areas other than, for example, hairdressing and the arts, which they have traditionally always been trained in (Department of Education, 1998).

2.2.1.4 Study methods

The methods that an individual uses to study is of great importance in determining whether or not they will succeed academically, and it has been found that there is indeed a difference in the manner in which boys and girls study, which could negatively or positively affect their academic achievement. Miller, Finley and McKinley (1990) investigated the presence of certain study methods and orientations among male and female college students. They found that both men and women made use of styles that were both beneficial and detrimental to their academic achievement, but that men tended to make use of more detrimental styles more often than did women. This indicated that men were thus at a higher risk academically, and more urgently in need of academic assistance and counselling.

2.2.1.5 Interest and self-efficacy

There seems to be a large difference on the affective domain of males and females with respect to certain academic tasks, which could influence their achievement in these tasks. Boli, Allen and Payne (1985) found, in their research with a group of high ability college students, that boys were more self-confident about performing tasks related to mathematics than were girls. The boys were also less likely to attribute their success in a task to luck, as did a number of the girls, when given mathematical tasks to perform.

However, they also found that there was a negligible difference with respect to the actual scores attained by the girls and boys respectively in the various tasks. The above-mentioned presence of sex-roles in society could account for this fact that males are more self-assured when it came to tasks such as mathematics, than are females, irrespective of their ability.

Men are also more inclined to score higher on self-efficacy and interest ratings related to gender-linked tasks (e.g. mathematics), than are women. Hackett, Betz, O'Halloran and Romac (1990) found that male undergraduate university students who were requested to perform tasks related to both mathematical and verbal ability, rated their level of self-efficacy and interest in the tasks, after the execution thereof, as much higher than did their female counterparts. It is possible that these higher interest and self-efficacy ratings given by the men, especially with respect to the mathematical tasks, could account for the increased performance by them in these tasks. It can however, also be hypothesised that the increased ability could conversely be the influential factor on the higher ratings (Hackett et al.).

2.2.1.6 Parental involvement

Parental involvement can play a very important role in the academic achievement of an individual, as will be discussed in more detail in the following chapter (Kellaghan, Sloane, Alvarez & Bloom, 1993; Fehrmann et al., 1987). The gender of the child can however, also influence the amount and intensity of involvement by the parent.

The above-mentioned can be seen in the fact that parents of girls tend to be more involved with their daughters' education than are parents of boys, with the result that girls are found to academically out-perform boys (Fehrmann et al., 1987). The involvement that parents do however exhibit, with respect to their sons' educational needs, also showed variations. Parents were found to be more involved with their sons during the lower school grades, with this involvement gradually lessening as the boys grew older. This could possibly account for the fact that boys tended to perform poorer than girls with respect to general academic achievement by the time they reached grade 12 (Stevenson &

Baker, 1987; Van der Watt de Beer, 1980). In addition to the fact that parents tended to be more involved with their daughters, this parental involvement was found to play a more important role and had a stronger impact on the academic performance of girls, than it did on that of boys (Cherian & Cherian, 1997; Stevenson & Baker).

2.2.1.7 Genetics and physiology

It has been hypothesised that boys, in general, tend to be in a genetically more vulnerable position, because of the fact that they possess a Y-chromosome. The lack of genetic material on this Y-chromosome allows recessive genes on the X-chromosome to be expressed, which in the case of girls will be hampered by the presence of a second X-chromosome. The expression of these recessive genes could explain why boys are more likely than girls to have haemophilia, reading disabilities, speech defects, emotional disorders and some forms of mental retardation, all of which impact negatively on the academic achievement of an individual (Flanagan, 1996). More specifically, the incidence of language disorders in boys is between two and eight times as many as it is in girls (Shaywitz & Shaywitz, 1991; Waldinger, 1990). In addition to this, it was found that the actual brain structure of girls and boys tend to differ in that girls have a more dominant left hemisphere. This in turn provides girls with an advantage over boys when it comes to tasks that involve learning, and in particular auditory learning (Moir & Jessel, 1991).

2.2.2 AGE

The age at which a child enters school is very important. Children are expected to be able to perform a certain number of tasks at a certain age, which will help them adapt more easily scholastically. A child who is not school-ready, by virtue of age, physical health and abilities, perceptual abilities, cognitive abilities, language usage and affective-social skills, is likely to struggle to meet the demands set by the education system. By not mastering the tasks that are expected of them, these children will eventually find themselves lagging behind academically (Derbyshire, 1991).

In South Africa it is legally stipulated that a child must enter school the year in which they turn seven (Derbyshire, 1991). According to this, children should enter grade 12 in the year in which they turn 18 years old; by implication they will be 17 years old for a portion of their grade 12 school-year. Van der Watt de Beer (1980) found in her research with grade 12 learners, that those learners who were 17 years old (and thus went to school at the required age), performed significantly better than learners of other age groups did, both younger and older. She found too that the 18-year-old and 16-year-old learners performed poorer in comparison to the 17-year-old learners, while the 19-year-old learners' performance was the lowest. In addition to this, she states that most of the 19-year-old learners had previously repeated a grade, indicating that they were previously already experiencing difficulties academically. In contrast, the 17-year-old learners had not repeated any of their grades.

From the above-mentioned it can be seen that the age of a learner does indeed seem to play a role in explaining the differences present in the academic performance of groups of learners of different ages.

2.2.3 HEALTH AND NUTRITION

Nutrition serves the very important function of meeting the energy and bodybuilding needs of an individual during all phases of life. Certain phases however, prove to be of more importance to the future development of the individual than others do. One such important phase is that of the prenatal and early infancy periods (Schultz, 1990).

During the prenatal period the mother's nutrition is of vital importance, and studies have provided indications that an inadequate diet may possibly have a negative affect on the development of the child's brain and so affect their resulting intellectual development (Kaplan, 1972). Schechter (1996) also states that foetal malnutrition is one of the causes of mental retardation and adds that severe nutritional deficiency (e.g. kwashiorkor) during the postnatal period has an equally negative effect on the intellectual development of the individual.

Poor nutrition during these periods can thus be shown to play a significant role in influencing a child's later scholastic performance (Schultz, 1990).

Not only does previous malnutrition play an influential role on the level of academic achievement that the learner attains, but also the learner's state of health. Learners experiencing poor health were found to perform scholastically lower than those learners who enjoyed satisfactory and good health respectively. This can be put down to the fact that poor health can often be related to sight and auditory problems, which from a young age can influence the learner's ability to function effectively in the classroom situation (Van der Watt de Beer, 1980).

Thomas (1990b) further elaborates on this topic by pointing out that poor nutrition can contribute to illnesses that force learners to stay home from school, thus causing them to forego vital information that is necessary for achieving well academically. He also states that poor nutrition could contribute to irritability, early fatigue, a lack of concentration and difficulty in memorising and recalling information. Visual disorders, presence of motor skill inaccuracies, and a variety of physical pains could also distract learners from their scholastic tasks. Schiedelbein and Simmons (1981) too found that health and malnutrition were significant predictors of academic achievement. They found that learners with good health performed better than those who were experiencing health problems. This, the authors felt, could indirectly also suggest that the role of the parent is important in determining the academic performance of the learner, as it is the role of the parent to provide the necessary nutrition for their children.

It is not only that the learner's state of health affects their academic achievement, but conversely that the level of academic achievement that a learner attains, that seems to influence their health. Low achieving American learners were, for example, found to report higher degrees of anxiety and resulting somatic complaints more frequently, than did those learners who were academically superior (Crystal et al., 1994). In the same light it has been found too that high levels of strain experienced by students resulted in a decrease in their overall academic performance (Hackett, Betz, Casas & Rocha-Singh, 1992).

It is difficult to establish the direct connection between health and nutrition, and academic achievement. The reason for this being that undernourished populations often present with a great number of additional, and co-existing factors that could contribute indirectly to the poor academic performance of the learners, for example low socio-economic status and a high incidence of illiteracy (Thomas, 1990b).

2.2.4 BIRTH POSITION

According to Thomas (1990a), an individual's position in the birth order of a family can hold psychological, social or even biological consequences for the individual, all of which can influence the academic performance of the individual.

- Psychological – Various studies have revealed that there are in fact a number of psychological consequences stemming from the order in which children are born, in relation to their siblings. Belmont (1977) found that children born first, evidenced better psychological adjustment than last borns, while Belmont and Marolla (1973) found that the higher up in the birth order a man was, the higher his intelligence test scores were. Thus children who are higher up in the birth order can be expected to perform better scholastically.
- Sociological – Traditionally the first born of a family received many privileges and responsibilities that the children born later did not, this included the privilege of attending school. However, over time this pattern has changed, with parents now distributing duties and privileges more evenly among the siblings, and children using their own initiative to obtain what they want from life (Thomas, 1990a).
- Biological – Statistics indicate that children born first tend to grow faster than siblings born later, but it is found that this difference does not seem to continue to be present once the children are fully grown (e.g. there is no significant difference in adult height) (Thomas, 1990a).

2.3 FAMILY CHARACTERISTICS

2.3.1 COMPOSITION OF FAMILY

The composition of the family can refer to a number of aspects, namely the presence of one or both parents, the number of children in the family, as well as to whether or not members of the extended family live in the same house. Here, two aspects will be looked at in more detail, namely the presence of one or both parents and the number of children in the family, and the effects of this on a child's academic achievement.

2.3.1.1 One-parent homes vs. two-parent homes

Parental marital status and the presence of one or two parents in the home-life of the learner was found by Van der Watt de Beer (1980) to influence the academic achievement of the learner. According to her research, learners whose parents were married achieved better scholastically than did those children from divorced or widowed parents. She further points out that the absence of one parent, through either death or divorce, has a negative influence on the entire family, and it can thus be expected to have an equally negative influence on the learner who grows up in this environment. This negative effect can thus also affect scholastic achievement.

In contrast, however, Clark (1983) is of the viewpoint that the interaction patterns of the family plays a larger role in a child's academic achievement than does the physical composition of the family. When focussing on the presence of one or two parents in a household, he found that there was little difference in the academic achievement of the learners living in the respective situations. He did however find that the relationships between the family members, as well as the internal perceptions and beliefs of the individual members, within these one- and two-parent homes, had a much greater impact on the learners and their resulting academic achievement.

Kurdek, Fine and Sinclair (1995) are also of the opinion that academic achievement is not merely determined by whether or not a child grew up in a one- or two-parent home. They feel that it is rather the number of parenting transitions that the child experiences, which could account for the differences, evidenced with respect to academic achievement. They defined parenting transition as the occasion when a child's basic family structure is altered, especially through divorce and remarriage. It was found that children who had experienced two or more parenting transitions achieved significantly lower than those children who had not experienced any transitions of this kind. This is in agreement with the finding of Van der Watt de Beer (1980), with respect to the disruption that a family experiences with a death, or divorce in a family.

Louw, Schoeman, Van Ede and Wait (1991), however state that the quality of the parent-child relationship and emotional support offered to the child after a divorce, can influence the degree of adjustment that the child attains, and can in turn improve the child's overall functioning, and resulting academic achievement.

2.3.1.2 Number of children in the family

Van der Watt de Beer (1980) also found in her research that family size plays an influential role on academic achievement. She found that learners who came from smaller families, namely those with one or two children, performed better academically, in comparison to those learners who came from larger families, with four or more children.

Thomas (1990a) found that there are a number of consequences, both positive and negative, that stem from the size of the family that a child grows up in, which can influence the academic achievement of a child. These are:

- Finance – The finance required to school the children in a family, would depend on the number of children in that family. A smaller family will thus find it easier to offer their children a better and more complete education, in comparison with a larger family.

- Socialisation – If the child has a number of siblings they will be able to master the task of peer socialisation at home, while a child with only one or two siblings will have to rely on pre-school or kindergarten for the opportunity to develop this skill. Children from a smaller family will however in turn be able to spend more time with their parents and will thus benefit intellectually and socially from this opportunity of being exposed to adult language and conversation, which the child from a larger family might not be able to experience. (This obviously depends on the degree to which the parents are involved with the children, and the quality of this interaction.)
- Privacy – The child from a larger family is less likely to have the privacy that they require from siblings, for rest and contemplation, or a quiet place for studying, which a child from a smaller family will be able to enjoy.

2.3.2 PARENTS' EDUCATION LEVEL

It has been found by a number of authors that the education level of a learner's parents is effective in distinguishing between groups of high achieving learners and those that tend to perform poorer academically (Moller, 1995; Stevenson and Baker, 1987; Van der Watt de Beer, 1980). Moller found more specifically that completion of secondary school education on the part of the learners' parents was a significant indicator for high academic achievement of the learners.

2.3.2.1 Father's education level

Fathers who have higher qualifications are often able to enrich their children's intellectual lives with their own knowledge, where as fathers with lower qualifications find this harder to do. There is also a greater likelihood of there being a wide variety of books and magazines in the homes of learners with higher qualified fathers, which better equips the learner to effectively complete projects and assignments that are given at school. The education level of a learner's father in this way can influence the academic achievement of the learner himself, as Van der Watt de Beer (1980) found in her research. She found that those learners whose fathers attained a level of education higher than standard 8

(grade 10) performed better academically than those whose fathers had not attained at least a standard 8 (grade 10) qualification.

2.3.2.2 Mother's education level

In accordance to her findings related to the educational qualifications of a learner's father, Van der Watt de Beer (1980), also found that learners whose mothers have a higher education level, tend to perform better than those whose mothers possessed a lower educational qualification. This finding is however not very reliable, as she herself stated, due to the fact that only a small percentage of mothers in the sample had tertiary training. This can be ascribed to the fact that it was not expected of mothers to attain a high education level, during that period of time.

Stevenson and Baker (1987), too found that the mother's education level had an impact on the academic achievement of the learner, in that children whose mothers possessed a higher education level performed better academically. This they attribute not only to the fact that there were more likely to be resources available for the child in the home, but also to the fact that they found that these mothers seemed to be more involved with their child's day-to-day educational activities. This involvement could in turn have had a positive influence on the child's academic achievement.

2.3.3 PARENTAL AGE

The age of a learner's father does not, according to Van der Watt de Beer (1980), seem to significantly impact on the learner's academic achievement. She found that learner's whose fathers were in the age group 39 years old and younger tended to perform only marginally better than those who had older fathers. Mother's age too appears to show a negligible influence on the academic achievement of learners. Van der Watt de Beer indicates that learners, whose mothers were in the age category 39 years old and younger, tended to perform only slightly better scholastically, than did those learners with older mothers.

2.4 SCHOOL CHARACTERISTICS

It can be expected that school related factors would have an impact on the academic achievement of a child, as it is in this environment that the child is expected to perform the scholastic tasks and in many instances excel at them. The discussion, which follows, with respect to the school-related factors, will focus on the availability of necessary facilities and equipment for use by the learners, as well as the condition of these facilities and equipment, and the impact of the medium of instruction used at school.

2.4.1 FACILITIES AVAILABLE AT SCHOOL

A survey conducted by the Human Sciences Research Council (HSRC) in 1998, to investigate the state of schools in South Africa, revealed shocking statistics. The report stated that approximately 75 % of schools in the Free State did not have telephones, while more than 50% were without electricity and almost 20% did not have access to running water. In addition to this many of the schools did not have sewage. In 1996 the HSRC survey showed that many Free State schools did not have facilities such as libraries, laboratories or other specialised classrooms, at their disposal (Krüger, 1998), which could contribute to the lower levels of academic achievement mentioned previously.

The facilities and equipment made available to learners at school play an important role in the academic achievement of these learners. The lack of facilities such as libraries, and equipment such as desks, electricity, scientific apparatus and computers, serve to lower the academic performance of learners as their experience of school is negative, and their experiential opportunities are limited (Simon, 1991). Behr, Cherian, Mwanwenda, Ndaba and Ramphal (1986) state that badly ventilated, humid and over- or under-heated classrooms tend to induce drowsiness and fatigue in the learners, the results of which are ultimately seen in their lowered level of academic performance.

Additionally, poor academic performance has been reported in situations in which equipment has indeed been made available to learners, but has been poorly maintained.

They attributed this lowered performance to the fact that there was a decrease in school attendance by the learners, as a result of poor learner morale (World Bank Policy Study, 1988).

2.4.2 MEDIUM OF INSTRUCTION

In all schools there is a choice as to which language will be used as the medium of instruction. This however places a number of learners, who do not speak the chosen language, at a disadvantage when required to compete with learners who are native speakers of the language (Tollefson, 1991). Since children express emotion, refer to both abstract and concrete events and learn more about their world by using language (Drum, 1990), it can be expected that the language used by the school will significantly influence the educational outcomes of the learner. If the learner is unable to understand what the teacher in the classroom is saying, then the likelihood of the learner to be able to make use of the information is greatly reduced. Effective communication between learner and teacher will thus depend on the use of a common language in which both parties are well versed.

2.4.2.1 The choice of English as medium of instruction

In South Africa, English has become the medium of instruction in black schools due to a number of reasons. Initially English was chosen as the language of choice during the colonial era. Later this trend was put forth by the impact of English missionary teachers on black education throughout South African history (Mawasha, 1987). The continued use of English as a means of instruction is, to the present day, fuelled by a number of opinions that black parents themselves hold. Firstly, many black parents believe that African languages have little value (Chick, 1992), and feel that the use of these languages in education is a way of keeping their children back (Bokamba, 1991). Secondly, the use of a black language as a medium of instruction has been met with much objection, as many feel that it lacks the appropriate vocabulary for modern-day subjects, like science and mathematics (Breton, 1991).

Many feel too, that the choice of English as the medium of instruction will equip children with a working knowledge of the English language, which will ultimately allow them to enter the international community with more ease (Chick, 1992). This too will enable them to obtain technological, economic and political empowerment (Sentson, 1994).

2.4.2.2 The importance of mother tongue education

For many black children in South Africa, English is a second-language, seldom spoken in the home. This makes it difficult for learners to understand the finer aspects of the language used in the school setting, and thus affects the level of understanding that the learner attains (Sentson, 1994). This lack of language proficiency in turn acts as an important contributory factor to poor academic achievement (Marais, 1994; Simon, 1991).

Kathleen Heugh of the Pan-African Language Council is of the opinion that it is this language discrepancy that plays an important role in contributing to the poor academic results of the grade 12 learners in South Africa. She ascribes the low grade 12 pass-rates present in South Africa, to the fact that many learners have to write their examinations in a second language, such as English – a language in which the learners are not very proficient (“Moedertaalonderig belangrik, 1998”).

Although children may not be proficient in the language used as the medium of instruction in schools, it is comforting to know that they can indeed be helped to better understand what is being said in the classroom situation. This can be done by means of the speaker using certain techniques, which can assist the child in learning the language. If the speaker, for example, makes use of non-verbal cues and gestures, simpler language (in contrast to more complex language usage), and repeats and paraphrases utterances, then the learner is better able to understand what is being said (Fillmore, 1982).

The implication of this for the school setting, especially secondary school, where the medium of instruction is not the home language of the majority of the learners, is however not very positive. As Fillmore (1982) points out, it is virtually impossible for a

teacher to make use of the techniques required to promote understanding in the learners, when teaching. Firstly it may be difficult to include gestures and non-verbal cues, as the stimulus being discussed is often not within the classroom situation. Secondly, when teaching complex subjects, such as science, the language is automatically of a more difficult nature, and it is difficult to use the simplified language required for a learner to understand. Lastly, time restrictions and the presence of learners who do indeed understand the language makes it difficult for the teacher to continuously repeat what is said, in order for the non-proficient learner to understand.

This is thus an aspect that needs to be addressed in more detail in future, in order to assist those learners who attend schools where the medium of instruction is not their mother tongue.

2.5 SUMMARY

This chapter focussed on the biographical factors that can have an influence, both positive and negative, on the academic achievement of a learner, and over which a learner does not have control. The literature review had shown that many of the factors mentioned simply cannot be considered in isolation, as they interact with one another in bringing about effects on a learner's performance. There are also a number of areas where it is difficult to establish a direct relationship between the biographical factors and academic achievement, as there seems to be both indirect, as well as inverse relationships.

Gender differences were found to contribute to academic achievement. It was however not found that individuals of the one gender were academically superior to one another, but rather that the differences present between the two groups were due to a number of factors that indirectly affect academic achievement. The type of task that is expected from the learner, as well as the learner's sense of efficacy with respect to the task, can influence gender differences in academic achievement. The cognitive styles and study methods that the learner makes use of, the sex-role influences present in society and the degree of parental involvement present, can also play a role in this respect.

The age at which a learner enters school is essential in that it is indicative of the degree of school readiness that a learner has attained. The age of the learner then continues to play a role in whether or not they will effectively be able to cope at school.

Health and nutrition are important for individuals in order for them to develop to their full potential. If at any stage during the development process, including the prenatal phase, an individual suffers a degree of malnutrition or ill health, their functioning will be impaired and the results hereof are often seen in their declining scholastic performance.

An individual's position amongst their siblings, in their family's birth order, was found to hold psychological, sociological and biological implications for the individual, all of which will affect their overall functioning.

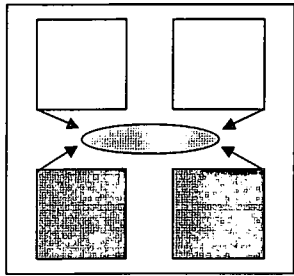
The family unit is a very important aspect in a learner's life. It is in this environment that individuals first learn the skills necessary for successfully achieving what they set out to do. The composition of the family, namely whether it is a one- or two-parent home as well as how many children are present in the family, can influence the academic performance of the learner. The influence exercised by the family, as a result of its composition, is due to both the physical and emotional resources available within the home.

The education level of their parents can influence learners' scholastic performance, as the amount of academic assistance that can be given by the parent often depends on their own qualifications. Parental age also plays a role in this respect.

The school facilities available to learners are essential in ensuring that learners perform well. The presence of necessary equipment and facilities will facilitate experiential learning, and will serve to promote a positive attitude amongst the learners. The language that is used as a medium of instruction is also important, as it is vital that the learners fully understand what is being said in the classroom, in order for them to excel academically. The use of a language that is often a second-language, and sometimes a

third-language, for a number of the learners in the school, makes the task of effectively participating in the class, and thus learning, difficult.

The factors discussed above are relatively fixed and are difficult to manipulate independently. In order to assist learners in improving their academic performance, however, long-term programmes can be implemented. These programmes can focus on better educating individuals as to how these factors can influence scholastic performance and how they themselves can play a role in changing a number of these factors over time, in order to promote more positive outcomes in future.



3

INTERNAL FACTORS INFLUENCING ACADEMIC ACHIEVEMENT

'The principal goal of education is to create men who are capable of doing new things, not simply of repeating what other generations have done – men who are creative, inventive and discoverers. The second goal of education is to form minds, which can be critical, can verify and not accept everything they are offered.'

Jean Piaget

3.1 INTRODUCTION

Poor scholastic performance can be associated with, not only external or biographical factors, such as family composition or socio-economic standing, but also with more internal factors, such as perceptions, and more specifically perceptions related to the learners and their families (Clark, 1983; Lubeck & Garret, 1990). These factors are seen to either encourage, or hamper, the development of the potential of an individual, and operate not only in the home, but also in the school setting (formal education), as well as in society as a whole (Radford, 1991b).

The three influential persons ever present within the classroom setting are firstly the teacher, secondly the learner and lastly the learner's parents (or guardians). The latter are mainly present in that they have instilled upon their children, while they were growing up,

the beliefs, attitudes and habits that they themselves hold with regards to education and schooling. These beliefs and attitudes then become internalised, and later exhibited by the learner within the learning situation. In addition to these attitudes and values, held by both teachers and parents, the interactions between learner, teacher and parent, too play a determining role in shaping the attitudes that the learner develops towards school and learning. In this way these attitudes will also eventually affect the resulting level of academic achievement that the learner will attain (Coleman, 1998).

This chapter will discuss, in more detail, these internal factors, related to the learners, their parents and the teachers, which play a role in influencing the academic achievement of the learner.

3.2 LEARNER INVOLVEMENT

The academic achievement of learners is to a large degree, dependent on the learners themselves. This “involvement” in their own scholastic performance can be divided into a number of areas that all work together in determining the level of achievement that a learner will attain. These factors include the interaction between learners and their parents, learners and their teachers, and the involvement that the learners themselves show. The learners’ interaction with their parents and teachers will be discussed in paragraphs 3.3 and 3.4 respectively; while this section will focus on the learner’s own involvement. More specifically, the degree of motivation and responsibility that the learner shows towards schoolwork, the level of self-efficacy that the learner exhibits, the study habits that are used, and the influence of the peer group (with its respective attitudes and values about schooling), will now be discussed in more detail.

3.2.1 LEARNER MOTIVATION

Motivation, according to Plug, Meyer, Louw and Gouws (1988), is regarded as a term that can be used to denote a class of factors that determine or regulate an individual’s behaviour. It can also refer to factors that cause behaviour to be initiated, continued (or

ceased), and directed in a certain way (Day, 1990). A lack of motivation on the part of the learner can lead to tiredness at school, absences and eventually school dropout, and it can also be related to under-achievement and problematic or disruptive behaviour at school (Pretorius, 1998b).

There is to date much discussion about which factors play the most important role with respect to motivation. There is conflict as to whether it is the intrinsic (internal) factors, referring to factors that are derived from internal feelings of satisfaction, or rather the extrinsic (external) factors, where external rewards and punishment prove to be the driving force behind the motivation, that are most important (Day, 1990; Reber, 1995).

Day (1990) is of the viewpoint that achievement motivation and competence motivation (or mastery motivation) form an integral part of intrinsic motivation for an individual. He describes achievement motivation as the individual's need to achieve, and often individuals who display this type of motivation tend to seek challenging goals, that deliver delayed and larger rewards, rather than immediate, smaller ones. These individuals also prefer to determine their own destinies and make independent judgements based on their own personal responsibility and evaluations. On the other hand, competence or mastery motivation refers to the individual's drive to become competent and effective in dealing with the environment. According to Ryan and Connell (1990) mastery motivation plays an important role in the developmental processes of a person and can be seen to underlie the growth of psychological structures and the increasing degree of competence experienced by each individual. This is evident in a young child who learns about his environment by playfully manipulating different objects, in order to obtain a sense of mastery over them. Mastery motivation also plays a significant role in the academic domain, manifesting in the learner's natural tendency to discover and learn, assimilating material and facing challenges. This places an emphasis on the learner's autonomy in effectively dealing with scholastic challenges. Competence or mastery motivation and achievement motivation, both stress personal responsibility, and can thus be employed in the educational setting to effectively motivate learners, as can traditionally used extrinsic factors, like grades, rewards or punishment (Day).

In addition to the above-mentioned types of motivation, future orientated motivation, such as a learners intention to pursue a tertiary educational qualification, upon leaving school also plays an important role in the commitment that a learner shows towards school, as well as the resulting achievement that the learner attains. This desire to study further can be related to both personal motivation as well as achievement motivation (De La Bat, 1991).

3.2.2 PERSONAL RESPONSIBILITY

Responsibility can be viewed, according to Griessel and Oberholzer (1994, p.38), as a person's 'innermost ability to meet obligations or to choose and act without exterior authority, guidance or compulsion'. Thus individuals who accept responsibility for their life, accept too that they are actively involved, or participating, in the outcome thereof.

Schmitz and Skinner (1993) state that the belief, by learners, that good academic outcomes are the result of their own actions, can strengthen the perceived control that learners experience in the academic domain. This belief, they found, is significantly linked to good academic success. More specifically they found that when a child has the expectation of more control over academic success, the child tends to exert more effort with respect to mastering the task, with the result being that the child's performance is improved. Conversely the opposite is also true – less perceived control leads to less effort and poorer outcomes.

Parental involvement also plays an important role in the development of learners' personal responsibility regarding their academic functioning. Learners develop effective levels of responsibility when they receive moderate levels of parental supervision. In other words, parents provide the learner with sufficient guidance and structure, without taking on too much of the responsibility related to the learner's academic tasks. This enables learners to develop the belief that they are personally responsible for the attainment of good grades (Kurdek et al., 1995). The attitudes and values that are held by the family about education and schooling can also influence the development of the learners' attitudes towards accepting responsibility, as can the actions and attitudes that

the teacher promotes within the school setting. In addition, if there is agreement between what the home and school promotes, with respect to the development of personal responsibility towards schoolwork, then the learner is also more likely to experience an improved sense of personal responsibility (Coleman, 1998).

The importance of responsibility can thus be summarised as follows:

When a child moves towards the world of the adult, he must get to know the order and systems of adulthood. Because the world of the adult is polymorphous, man has to choose between ways of doing things that are either good or bad, advantageous or disadvantageous, proper or improper. This requires a sense of responsibility. In order to be able to make a choice in a responsible manner, all humans must acquire an attitude based on reliable knowledge and the acceptance of moral norms whereby they will be able to distinguish between good and bad (Griessel & Oberholzer, 1994, p. 39).

3.2.3 SELF-EFFICACY

Self-efficacy, according to Bandura (1989) refers to people's beliefs about whether or not their capabilities will enable them to exercise control over events influencing their lives. In addition to this, it also encompasses the belief that these capabilities will enable individuals to choose a course of action that will allow them to fulfil the demands required by the specific task. As Maddux (1995, p. 4) states:

The crux of self-efficacy theory is that the initiation of and persistence at behaviours and courses of action are determined primarily by judgements and expectations concerning behavioural skills and capabilities and the likelihood of being able to successfully cope with environmental demands and challenges.

This self-efficacy that a person then experiences can however be affected by a number of factors, causing an individual to experience changing degrees of self-efficacy. These factors are:

- Performance experiences – Successes or failures are clear and powerful determinants of self-efficacy. A person experiencing a failure is more likely to expect failures in future, while successes in the same way lead to further expectations of success.
- Vicarious experiences – Experiences of observational learning, modelling or imitation can lead individuals to infer expectations for themselves, by basing them on the outcomes experienced by the person being observed or imitated.
- Imaginal experiences – Individuals can form self-efficacy expectations based on anticipatory visualisations of outcomes of situations in which they find themselves.
- Verbal persuasion – This is a less potent influence in the formation of expectancies, and the self-efficacy expectations, which are formed, are largely dependent on the relationship between the individual and the persuader.
- Psychological and emotional states – Individuals who find themselves in a negative state of mind, are more likely to doubt their abilities, and will thus form more negative expectancies, than would an individual who was in a positive or neutral psychological state (Maddux, 1995).

Schunk (1995) points out that learners who have a high degree of self-efficacy for accomplishing a task, approach the task differently, than will a learner who doubts their abilities. The more confident learners will tend to participate more eagerly in the task, work harder to complete it, and are also more likely to persevere and persist longer if they encounter difficulties with the task at hand.

Multon, Brown and Lent (1991) reiterate the above, in their findings that self-efficacy beliefs have a positive relationship with both academic achievement and persistence in tasks. More specifically they found that these self-efficacy beliefs accounted for 12% and 14% of the variance in students academic persistence and academic performance, respectively. Lent, Brown and Larkin (1984) too found in this respect that both the level and strength of the self-efficacy for education, exhibited by undergraduate students, were related positively to the academic outcomes of these students.

It must however be kept in mind that there are also other factors that can exert an influence over the effect of self-efficacy on performance. According to Multon et al. (1991) these factors are related to the students themselves. In the first place, they found that the relationship between self-efficacy and performance was more prominent in low-achieving students than in average-performing students. This they viewed as an indication that this is an area where struggling students can effectively be helped to improve their overall performance. A second factor that was found to play an influential role in determining the effect of self-efficacy on performance, was age. The researchers found that there was a more significant correlation between the performance of younger students (high school level) and their levels of self-efficacy, than there was with college age students. Thus they felt that programs to improve students levels of self-efficacy should be presented to students as early as possible. Thirdly, they found that the type of task had an influence on the degree of effect that self-efficacy had on performance. They found that performance on more relevant tasks, such as basic skills tasks, and classroom related tasks showed a greater correlation with self-efficacy than did for example standardised achievement test performance. Lastly, the effect of self-efficacy beliefs on performance was found to vary across different types of students and the study methods used by the respective students.

Another aspect that must also be kept in mind is the fact that, according to research, men seem to have slightly higher positive outcome expectations for their own academic and career orientated achievement, than did women. This implies that men tend to have a more positive view of the expected consequences that will be brought about due to successful performance of a task and upon completion of that specific task (Hackett et al., 1992).

3.2.4 STUDY METHODS AND HABITS

Studying is an important aspect for any learner who aspires to achieve well, because without correct academic and study skills, learning will be rather difficult. The difficulty here is that studying is not always a positive experience for a learner. Many learners find that it is an activity that is limited in action and produces little rewards, or at least not

immediate rewards. In addition, it is often difficult for learners to judge whether or not they are utilising correct methods, and studying effectively, because of the fact that there is little immediate feedback. Effective studying often depends both on adopting a correct approach to learning (study methods), as well as having appropriate study habits (Entwhistle, 1991).

3.2.4.1 Study methods

Jones, Slate, Blake and Holifield (1992) found that a significant number of high school students encountered numerous difficulties regarding effective academic skills, and did not make use of skills that could benefit their academic performance. They found that most learners experienced difficulty managing time, maintaining attention, and reading with comprehension. More specifically they found that these skills, and the use thereof, declined during the secondary school years.

It is important that learners be assisted in studying more effectively. This can be done in a number of ways. Firstly, the learners should be taught how to set clear, realistic goals, which can be evaluated. Secondly, the learners need to be given more opportunities, in which they can correct their own mistakes, thereby learning from them. And thirdly, studying can further be improved if the learners are encouraged to view the material that has to be studied, as personally valuable to themselves (Walter, 1990). In addition to this, deeper rather than surface learning can be encouraged in order to help improve performance, as the deeper learning approach stems from the intention to establish personal understanding of the material being studied, rather than the mere memorisation thereof. This deeper learning approach can further be influenced by good teaching methods and styles (Entwhistle, 1991).

3.2.4.2 Study habits

Study habits, which are different to study methods in that they encompass the overall attitude towards learning, also play an important role in whether or not a learner will succeed academically. Two basic approaches to studying have been identified, which can

either benefit or hinder the learner. These are the strategic approach and the more disorganised approach. Learners who make use of the former approach tend to make use more often of well-organised study methods and time management strategies. This approach also implies that the learner adopts both deep and surface learning styles, combining them in such a way as to achieve the highest possible marks. This combination is often based on specific cues given by teachers in the class, about the criteria that will be used in awarding marks. The more disorganised learner, on the other hand, is in general more negative about studying and less interested in mastering the necessary skills. This learner also makes use of disorganised study habits and ineffective study methods. Utilisation of the strategic approach will generally lead to better academic performance, than will the use of the disorganised approach. (Entwhistle, 1991).

3.2.5 PEER GROUP INVOLVEMENT

3.2.5.1 Nature of peer group involvement

Peer groups begin to play an important role in the social and intellectual development of an individual during middle childhood (Louw et al., 1991). This influence continues into adolescence and often can become even more important over time, with the peer group influencing the value systems, standards and behavioural limits that individuals will set for themselves (Thom, 1991). Peer groups also fulfil an additional number of functions for the developing individual, among which are the following:

- An experience of comradeship;
- Opportunities for trying out new behaviours;
- Transfers of knowledge and information;
- Teaching of obedience to rules and regulations;
- Sex-role reinforcement;
- A weakening of the emotional bond between child and parent;
- An experience of relationships based on equal status (Louw et al., 1991).

Seifert and Hoffnung (1991) add that the peer group offers a setting in which the learner can acquire social skills, evaluate and manage personal relationships and learn to handle competition and co-operation. However, they are also of the viewpoint that peer groups may prove to be a negative influence on an individual, in that conformity is often demanded in the group. Often the individual is unable to conform to the expectations of the group, with the result that deviation from what is expected by the peer group, could manifest in severe psychological ramifications for the adolescent (Diver, 1990).

Weiner and Elkind (1972) identified three types of peer groups, which can exert a positive or negative influence on the individual. The first group is that one where the members obtain good marks and consider their schoolwork to be important. The second group consists of attractive and popular learners, and might include the best sportsmen. The third group includes the learners who are academically and socially unsuccessful, and who are often in trouble at school.

Membership to these groups depends on, amongst other factors, the specific individual's academic achievement. Those learners who are seen to struggle academically or who experience academic failure are less likely to join groups where academic success is valued, and strong academic learners are less likely to take part in the activities of groups whose members are academically unsuccessful, or often in trouble. It is clear that membership in the former two groups is likely to be more beneficial to the learner's academic performance than what membership to the latter might be (Kindermann, 1993).

Parental attitudes towards their children's peer group can also play an important role in determining which group children will choose to belong to, as well as which values and beliefs they will express within this group. This is due to the fact that children view the opinion of their parents to be more important than that of their peers, and would in addition prefer to follow their own decisions rather than those of the peer group in which they engage. More specifically, it was found that parental influence with respect to their children's chosen peer group membership was more significant in black families, than in white families, as the black parents tended to be more powerful authority figures for their children. The reason for this could be that they are more concerned about the "wrong

kind” of peer influence, leading to, for example, youth protests and extramarital teenage pregnancies, which are more prevalent in black, than white societies (Thom, 1991).

3.2.5.2 Peer group involvement and academic achievement

There is to date uncertainty as to what the exact nature is of the relationship between academic achievement and peer-group involvement. It is uncertain whether peer group membership directly influences academic achievement, or whether the interaction is that peer group membership is determined by the level of academic achievement of the individual (Green, Forehand, Beck & Vosk, 1980; Chen, Rubin & Li, 1997).

It was found in a study of Chinese children, that children who were socially rejected and exhibited aggressive, disruptive and acting out behaviour, and were assessed negatively by their peers, performed poorer on tests of academic achievement than did those children who were socially competent and who were assessed positively by peers (Chen et al., 1997). This could indicate that membership to more negative peer groups could influence academic achievement negatively, while on the other hand, studies have also found the reverse relationship to be true – that good academic achievement leads to improved peer group membership. Green et al. (1980), for example, found that children, who achieved high academically, seemed to be more accepted and liked by peers, than did those children who achieved low academically. Children were also found to be engaged in more positive interactions with high achieving children, and it is suggested that this positive interaction could be due to the perceived prestige that is related to performing well academically (Fehrmann et al., 1987).

The discrepancy concerning the exact relationship between peer group involvement and academic achievement is thus clear.

3.3 PARENTAL INVOLVEMENT

The family is the first and most basic institution to which a child is exposed. It is in this environment that the child learns, through specific parenting styles, the necessary developmental skills for success in life (Louw et al., 1991). The family can thus be viewed as the developmental unit in which growth, experience and fulfilment, of each individual member, can take place (Pretorius, 1998a). As can be expected then, this environment will prove to be a continuing and important influential aspect of a child's development throughout their life span. Families often go to much effort to provide the necessary support that will shape their children's futures and ensure that they experience a reasonable degree of scholastic success. This academic success will in turn lead to further success in their adult lives (Clark, 1983). It is thus clear that parents are undoubtedly important participants in the education of their children. They provide both the physical facilities, and emotional and social background that is necessary for their children to effectively adapt to the school environment, and they are also responsible for the financial implications of schooling their children (Bennaars et al., 1994). It can then be added that it is not whom the parents are that makes a difference to a learner's performance, but what the parents do (Kellaghan et al., 1993).

Parental involvement can thus be viewed as an active participation of parents in the learning activities of their children, which takes place mostly, but not exclusively in the home. This may include the interaction between parent and child, as well as between the parent and the child's teacher. The parents' aspirations and expectations for their child also play a role in this respect (Coleman, 1998; Keith, Reimers, Fehrmann, Pottebaum & Aubrey, 1986).

Clark (1983) points out that there are five main factors, related to parental involvement, that distinguish between families with high academically achieving children and those with low achieving children. These factors are:

- Parental supervision strategies (parent-child interaction);
- Parental beliefs regarding their own responsibility in their child's academic performance;
- Parent's sense of control over their circumstances;
- The type of routine social activities engaged in at home by the family members; and
- Parental expectations for the learner.

Furthermore, it is also possible that the socio-economic circumstances of the parents, can further influence the degree of parental involvement that is exhibited, and can at times prevent parents from being more active in their children's education (Arcaro, 1995).

3.3.1 FACTORS INFLUENCING PARENTAL INVOLVEMENT

3.3.1.1 Parent-child interaction

The importance of the parent-child relationship with respect to academic achievement has been widely discussed. Pretorius (1998a) is of the viewpoint that the emotional bond, or emotional closeness present in the child-parent relationship is the single most important factor in the education of a child, and that this aspect can be seen to run through all other aspects that play a role in this respect.

All children, from a very young age, show the desire and potential to learn, but the actualisation hereof is under the direct influence of the parent. It is often up to the parent to show a child the importance of school and learning, as well as to help the child to develop the necessary skills to succeed at school and to effectively cope with problems that may arise within the school setting (Coleman, 1998). It is often seen that children, who experience a lack of involvement by their parents with respect to their schooling, see this as a sign of rejection. While, on the other hand, when an active interest is shown in their scholastic activities, by their parents, children viewed it as an indication that they as children are accepted unconditionally by their parents (Pretorius, 1998a). Thom (1991) states that moral development of the learner too, hinges on the interaction between parent

and child. The child finds it easier to internalise the moral values of the parent when there is a warm and loving relationship present, and where parents rely on a style of interaction that is based on mutual reasoning about beliefs and value, between their children and themselves.

Clark (1983) identified two distinct parenting styles evident in the interaction between parent and child, namely a “sponsored independence” style and an “unsponsored independence” style.

The “sponsored independence” style, is characterised predominantly by an authoritative parenting style, with the following behavioural patterns:

- Large amounts of parental interest and involvement in the child’s home activities;
- Frequent parent-child activities involving studying and information sharing;
- Consistent monitoring of the child’s use of time;
- Regular explanation and demonstration by parents of everyday life skills;
- Consistent parental expectations and standards for behaviour; and
- Expression of praiseworthy sentiments to the child, with regard to his abilities and achievements.

In contrast the “unsponsored independence” style is characterised by a more permissive or authoritarian parenting style, making use of the following patterns of behaviour:

- Limited interest and involvement in the child’s home activities;
- Infrequent activities by parent and child involving studying;
- Inconsistent knowledge of the child’s use of time, and of his out-of-home activities;
- Limited parental teaching and advising;
- Inconsistent parental standards and expectations with respect to responsible behaviour by the child; and
- Frequent expression of criticism and dissatisfaction to the child about his worth and ability.

Clark (1983) found that the “sponsored independence” style, fostered high academic performance among children, while the “unsponsored independence” style was more characteristic of parents whose children performed academically poorer.

Weiss and Schwarz (1996), in their research, also came to the conclusion that certain parenting styles were more beneficial to the academic performance of children. They found that children who came from homes in which their parents were highly intrusive, tended to show weaknesses in academic achievement, compared to those children who came from homes in which parents were authoritative, supportive, or unconventional.

According to Coleman (1998), a learner’s commitment to school is also an area where parent involvement, and interaction is of vital importance. He states that this commitment by the learner is often influenced by the home practices of the family. They shape the learner’s expectations of school, mediating between learner and school, and intervening to change the attitudes and behaviour of the learner or school, where necessary. He also highlights the fact that a learner’s commitment to school often has a positive outcome on the academic achievement of the learner.

3.3.1.2 Parent-teacher interaction

The variable of parental involvement can also be influenced by factors related to the practices of both the school and the teacher (Coleman, 1998). It is felt, that in order for an education system to be successful, both parents and teachers need to contribute to it (Berger, 1981). In South Africa research was done on so-called “effective schools”, in order to establish what factors played a contributory role in this “effectiveness”. These schools were labelled as “effective” because of the fact that the examination results obtained by these schools were in excess of 50%, in comparison to the average examination results of other comparative schools, which ranged between 15% and 30%. It was found that in three of the four “effective schools” interviewed, that the teachers relied not only on themselves to perform the task of educating and disciplining the learners, but included the parents in this respect. The administering bodies of the respective schools also relied on the input of the parents when making decisions that

pertained to the school itself, as well as the schooling of the learners (Carrim & Shalem, 1999). In addition to this Griffith (1996), found that in schools where there were fewer teachers and where the teachers were more experienced, there tended to be more parental involvement and higher academic achievement by the learners. It was however, also hypothesised that the higher academic results of the children in the above-mentioned schools created a more pleasant atmosphere, which could then have promoted more parental involvement.

This interaction between parents and teachers is thus of vital importance, and comprises a number of roles. Parents play both a mediating and intervening role, which then enables them to forge a connection with the school and play a role in the schooling of their children. This role in turn also enables the school to reinforce the positive attitudes that learners bring from the home, as well as compensate for any disadvantages that the learner might face at home (Coleman, 1998). It also enables the teacher to obtain a direct understanding of the parents' expectations with respect to school and their child, and gives parents the opportunity to hear the viewpoint of the teacher and how he or she experiences the child in the classroom (Kindred, Bagin & Gallagher, 1984). Parents also feel that they would be better able to help their children with schoolwork, if they received some degree of assistance from the teachers (Coleman).

However, the relationship between teachers and parents is not one without problems. Often parents feel that their self-respect is being undermined by the school through its approach to many important issues such as religious and racial matters, as well as the degree of importance that the school attaches (or fails to attach) to the parental role itself. This causes parents to feel frustrated and causes them to spend great amounts of time and effort trying to rectify the situation, or results in them becoming less involved in the school situation (Beck, 1990).

Another area that causes much discord between parents and teachers, is the fact that there are often a large number of discrepancies between what the perceptions and expectations of the teachers are and what those of the parents are, with respect to their children's

schooling. These factors influence both the parents and the teachers when it comes to interaction between the two (Smit, 1993).

Firstly, many factors leave parents feeling negative about the communication that exists between themselves and their child's teachers. Often they feel that their children do not receive fair attention and support from the teacher in the school setting, or that their children are being "separated" from the family, in that they show more loyalty to their teachers and friends, than they do to their family. Parents also sometimes find that they themselves struggle, or are not able, to help their children effectively with schoolwork, and experience this as a personal failure on their part. It is also the case that parents often feel that they are left with a magnitude of unanswered questions about their child's schooling, which a teacher should be able to answer (Smit, 1993).

Secondly, there are a number of aspects that have bearing on the teacher that can have a negative effect on the relationship between teacher and parent. Teachers may feel that parents have unrealistic expectations of the degree of success that the teacher should be able to help a child attain, and that parents leave the role of educating the child solely up to the school and teacher, without taking any responsibility for their role as parents. Teachers may also become frustrated by the fact that parents underestimate the abilities of the teachers, when it comes to fulfilling the needs of the child in the school setting (Smit, 1993).

Since there is this tendency for disagreements to develop in the relationship between school and home, it is also important to ensure that the interaction between parent and teacher remains positive. In this respect teachers should do more to encourage parental involvement through the identification and planning of activities that will promote co-operation between the school and home environment (Berger, 1981). Too often teachers dismiss parents from the process involved in educating their child, with the result that parents are lead to the conclusion that the task of education should be "left to the professionals". Since formal education plays a relatively small part in the life of the developing individual, this attitude serves only to negate the value of the family's

contribution to a child's education and can prove to be very damaging to the academic development of the learner (Coleman, 1998; Radford, 1991a).

The following can be kept in mind, in order to improve the vital communication between the parent and teacher:

- Teachers must be aware that parent collaboration is often dependent on an invitation by the teacher, to become more involved (Coleman, 1998);
- The communication channels between home and school must remain open. This means that teachers must continually inform parents of, for example, events that occur at the school, the curriculum being followed, and the methodology used to do this. It is also important that timely information be provided about their child's performance. The above-mentioned can be done by means of newsletters and meetings (Arcaro, 1995; Coleman, 1998; Newby, 1995);
- It is also important that teachers recognise that parents too have responsibilities and rights when it come to the education of their children (Coleman, 1998); and
- Teachers must make sure that the information, which reaches the parent is clearly understood, and in a language in which they are well-versed (Kindred et al., 1984).

3.3.1.3 Parental expectations

Coleman (1998) is of the viewpoint that parental expectations and achievement orientation in the home play a role in determining the child's commitment to school and learning. It can then be viewed that if children are more committed to school, they will tend to perform better academically.

The expectation that their children will reach a higher level of education has an important relationship to the academic achievement of the learner. More specifically the presence of parental aspirations for higher education for their children were found to significantly distinguish between those learners who were considered high-achievers and those who achieved more poorly academically (Moller, 1995). Crystal et al. (1994) found in

addition to the above, that parental expectations played a more important role in influencing low-achieving learners than higher-achieving ones, and that this influence was most evident in the affective states of the learners. Those learners who did not achieve well and whose parents had high expectations felt depressed more often than did those learners whose parents had low expectations for them. This was not found in the case of learners who were high-achievers. It is important to note that the higher levels of depressed feelings experienced by lower achieving learners, could in turn influence their academic performance further, possibly causing their achievement to decline further.

3.3.2 PARENTAL INVOLVEMENT AND ACADEMIC ACHIEVEMENT

Parental involvement has been shown by a number of authors to have a positive influence on the academic success of a child (Cherian, 1993; Griffith, 1996; Fehrman et al., 1987). This influence can also be seen more specifically, and indirectly, in the amount of supervision that children receive from their parents. A moderate amount of supervision appears to be optimal, with children still perceiving that they have a degree of responsibility (Kurdek et al., 1995). The degree of influence that parents exert over the amount of time that their children spend on homework and watching television respectively also affects their academic performance (Fehrman et al.).

There are however, a number of deciding factors that could influence both the degree to which parents are involved with their children's education, as well as the effect of this on the child's academic achievement. These are the child's age, their gender, and the attitudes of the parents themselves.

Parents tend to be more involved with younger children, than older children, and thus their influence over the academic achievement of their children, at a younger age, is more significant (Stevenson & Baker, 1987). To further emphasise this, Keith et al. (1986) found that parental involvement did not seem to play an influential role on the scores obtained by high school seniors on standardised achievement tests, thus indicating that parental involvement at this level was not significantly influential. The reason for the declining influence of parental involvement on the older learners could be due to the fact

that certain patterns of parental involvement may have been laid down while the learners were younger, and these patterns then continue to influence these learners at a later stage. The presence of actual parent-learner interaction may then become unnecessary and even unwelcome. In general, this inconsistency over time, causes one to be lead to the conclusion that parental involvement alone cannot maintain high academic performance (Reynolds, 1991).

Another factor that needs to be taken into consideration, is the fact that parents tend to be more involved with their daughters than with their sons, when it comes to providing assistance to their children with respect to their academic tasks (Fehrmann et al., 1987). This involvement was also found to play a more important role and have a stronger impact on the academic achievement of girls than on boys (Cherian & Cherian, 1997; Stevenson & Baker, 1987).

Lastly, parents' own negative memories of school, or attitudes towards school will also influence the amount of time and effort that they are willing to give, in order to become more involved with their child's education, their teachers and their school (Arcaro, 1995).

Parents are often also sceptical of encouraging progress and development in their children, especially at a young age, for a number of reasons. Firstly, parents are afraid that by encouraging academic success in their children they might unintentionally and unknowingly be placing their children at a disadvantage with respect to other areas of development, for example socialisation. Secondly, these parents are often reluctant to believe that young children are capable of acquiring important learned abilities markedly earlier than usual. They believe that this accelerated development is only possible for a few innately gifted and talented children, which is not the case. All children have the ability to develop learned skills at an earlier age than is expected of them. Thirdly, parents doubt whether it is desirable to accelerate a child's development beyond the average or "normal" rate, as this will not inevitably always turn out to be a permanent advantage, since children who developed skills at a "normal" rate often catch up, at a later stage, to the children with promoted development. Fourthly, and possibly most importantly, for practical purposes some parents who do feel that this accelerated

development is advantageous for their child, refrain from promoting it, purely due to lack of knowledge as how to go about doing it (Howe & Sloboda, 1991).

Additionally, Stevenson and Baker (1987) then raise the question as to whether parental involvement has a positive influence on academic achievement, or whether the case is rather that parents tend to be more involved with a child who performs better.

3.4 SCHOOL CLIMATE

School climate, which Coleman (1998) describes as the overall experience of the school environment that the learner experiences, includes the interaction between the teacher and the learner and the degree of caring that the learner perceives he is receiving from his teacher.

3.4.1 TEACHER-LEARNER INTERACTION

The teacher plays an undeniable role in the academic success of a learner. As Asa Hilliard III stated: 'Teachers are the mediators who provide, or fail to provide, the essential experiences that permit students to release their awesome potential' (Arcaro, 1995, p. 48), and in the words of P.W. Musgrave: 'The interaction between teacher and pupil is the essence of schooling'. It is thus very important that the relationship between the teacher and learner is positive, so as to ensure that the interaction between the two can be more beneficial, in order for the learner to be able to develop to his full potential. Indeed, teachers are responsible for and expected to ensure that a child receives the right kind of education in the right way (Bennaars et al., 1994).

Teacher-learner interaction is of vital importance in the commitment of the learner, especially when the home environment supports this interaction. For learners this interaction may include active participation in the classroom, acceptance of their responsibility for their own learning and positive relationships with teachers. For their parents this interaction may include the sharing of information, including pedagogical and

curricular information, opportunities to observe and share in classroom activities, and helping learners to learn. Generally teachers who succeed in creating and promoting this positive interaction (or collaboration) are viewed more positively by both learners and their parents (Coleman, 1998).

Teachers who are viewed more positively by learners have been found to exhibit a number of characteristics and characteristic behaviours, in the following areas:

- Discipline – These teachers are able to exhibit a good degree of control over the learners, are fair, do not show favouritism for one learner over another, and do not exercise excessive or unreasonable punishment.
- Instruction – In this respect these teachers are more helpful, explain work thoroughly, and in general present the classes in a more interesting way.
- Personality – These teachers are friendly, patient, show understanding for the learners, have a good sense of humour and show a genuine interest in the learners as individuals (Pretorius, 1998b).

Unfortunately teacher-learner interaction in secondary school is usually relatively minimal. Often classes are large and the teacher only sees the learners for short periods of time, when teaching selected subjects. Because of this, the teacher seldom gets the opportunity to interact with the pupils personally. The result is often that the teacher divides the class into three categories, namely the “good learners”, the “bad learners” and the “in-between learners”. This categorisation is based most often on the behaviour of the learner in the class, but is not always an accurate evaluation of the learner. The teacher then responds to the respective learners based on the preconceived idea that the learner is either good, bad or in-between, with no consideration for individual and personal attributes. This in turn could lead to self-fulfilling prophecies, which could influence a number of the learners negatively (Behr et al., 1986). Lubeck and Garret (1990) also investigated the interaction between teacher and learner and found that in certain schools, so-called “at risk” children, who came from disadvantaged backgrounds and who struggled scholastically, were stereotyped and treated negatively by teachers. It would have been expected that the teachers should instead have given these children more

positive attention, which would have been beneficial to them. The result of this was that these children's scholastic performance progressively declined. In addition to this, it has been seen that the presence of higher levels of teacher encouragement and lower levels of discouragement, for learners, lead to improved academic performance by these learners (Hackett et al., 1992). Teacher-learner interaction also plays an important role in curbing school-dropout, as it has been found that those learners who fail to connect with their teachers, are usually those who drop out of school prematurely (Coleman, 1998).

Watson and Ashton (1995) point out that there are a number of aspects, which teachers can promote within the school setting that can help the learner to function more effectively. These are:

- Helping the learners to gain self-respect, which is essential in helping them develop the confidence and courage to tackle new situations;
- Ensuring that learners experience a sense of achievement and fulfilment in the tasks that they are required to perform;
- Promoting self-assessment by the learners, so that they are taught to be self-critical, effectively dealing with failure, without losing heart. They can in this way be taught to experience the failure rather as a challenge, than as a cause for despair;
- Giving learners a sense of freedom, without which it will be difficult for them to become responsible for their own learning;
- Providing a stimulating environment with sufficient structure and discipline to promote attentiveness on the side of the learner;
- Giving learners the opportunity to be able to express their understanding of a subject, using their own particular gifts and interests;
- Listening to learners and respecting their concerns and ideas. The information yielded in this respect can be used as relevant starting-points for the development of teaching programmes, which learners will be able to relate to with greater ease; and
- Modelling behaviour that the learners can follow, and be inspired by.

3.4.2 TEACHER CARING

'High quality education will always depend on high quality teachers with buoyant morale and a reasonable sense of well-being' (Stuart Maclure in Radford, 1991b, p. 21). From the above statement it can be seen that the general attitude that the teacher exhibits within the school setting, plays an important role in the overall experience that the learners gain from schooling. The perception of the learners, with respect to whether or not the teachers genuinely care about them, is then the foundation upon which they base their general evaluation of the school, as well as the importance of education itself. This evaluation in turn contributes to the degree to which the learners themselves will be committed to the school and schooling, and eventually will predict the performance of the learner within the classroom setting (Coleman, 1998).

3.5 SUMMARY

The focus of this chapter was on the nature of the relationship that exists between academic achievement and internal factors, such as learner and parent involvement, and school climate, created by the teacher. The relationships looked at here are, however, also problematic in that the nature of these relationships are not always clear, and have at times been found to be either indirect or reversed.

Learner involvement, which includes the learner's level of motivation, sense of responsibility and degree of self-efficacy, as well as the study habits of the learner and peer group influences, all play a role in affecting the level of academic achievement that the learner will attain.

Motivation is first and foremost a factor that will either help or hinder the learner's performance. At present there is still much discussion as to whether it is intrinsic or extrinsic motivation that plays the most important role in this respect. These two forms of motivation however both have a place in the resulting success of the learner. Intrinsic motivation, which also includes achievement motivation and competence motivation, can

serve to help a learner develop a sense of autonomy, while at the same time striving to meet long term goals that deliver larger rewards. On the other hand, extrinsic motivation can help a learner to effectively strive for more short-term goals, within the school setting.

The level of personal responsibility that a learner has can also effect the level of scholastic success that will be achieved. Learners, who believe that they have a greater degree of control over their own schoolwork, have been found to perform better in scholastic tasks. Parents play an important role in helping these learners to develop a healthy degree of responsibility, as their actions, as well as beliefs and attitudes about schooling can influence the sense of responsibility that their children develop.

Another important influence on the academic achievement of learners is the personal belief that they hold about their own capabilities, and their expectations of success or failure. This can be summarised as the level of self-efficacy that they experience. These self-efficacy beliefs can be formed through a number of experiences, where the learner learns to expect a certain outcome, based on previous situations, both actual and imagined, and can be influenced by a number of factors. The self-efficacy beliefs that learners hold can also influence their academic performance, as expected failure leads to actual failure, while expected success, similarly leads to actual success.

The study methods and habits that learners make use of also influences their level of scholastic performance. Often learners make use of study methods that are ineffective, or they have a general negative attitude towards learning. This is due to the fact that studying is often viewed as an activity that is limited in action and offers little immediate rewards, or feedback. It is thus difficult for learners to ascertain whether or not the methods that they are employing are effective or not.

A factor that is often overlooked is the influence of the peer group on the academic progress of learners. The peer group acts to fulfil a number of necessary tasks in the development of the adolescent, which will assist them in the effective management of personal relationships later in life. However, the peer group can also be detrimental to the

learner, in that those learners who fail to fulfil the expectations of the peer group can often suffer rejection by the group. Peer groups can also be a negative influence in that these groups are often formed on the basis of the academic achievement of the members. Thus, learners who are not academically strong will tend to belong to groups where the members are similar, with a compounding result on the members.

The next area that was found to be related to academic achievement was that of parental involvement. The first institution in which children learn, is that of the home, and thus it is important that this environment continues to offer the learner what is necessary for continuing academic success. There are a number of factors that play an influential role in determining the nature of the parental involvement exhibited; this is the parent-child interaction, parent-teacher interaction and parental expectations.

The nature of the parent-child relationship needs to be one of mutual support. Often an authoritative parenting style, rather than a permissive or authoritarian one, is most beneficial for the learner. A learner's commitment to school is also influenced by the practices of the family.

The interaction between parent and teacher is an area with many problems, as there are a number of discrepancies with respect to the expectations of teachers and parents, with respect to a child's schooling. Teachers for example feel that parents do not have a right to intervene in the practices of the school, while parents on the other hand feel that they are not included in the school, or that they are unsure of what they should do to help their children. This is an area that should be focussed on in order to improve the relationship between home and school, as it has a lasting impact on the performance of the learner.

Parental expectations too play an important role in the academic achievement of a learner. The expectations of parents can be a determining factor as to whether or not a learner will be committed to school and schooling. This expectation, on the part of the parents, can also have a negative effect on a learner. If parental expectations are too high and the learner feels that they cannot be fulfilled, it can lead to feelings of despair, and a decline in scholastic performance.

The last factor discussed in this chapter is that of the school climate. This includes the interaction between teacher and learner, as well as the degree of teacher caring that the learner perceives. The teacher-learner interaction, as well as the degree of perceived teacher caring, are very important factors, which will determine whether or not the learner experiences the school situation as positive or negative. Unfortunately, in secondary school the interaction between the teacher and learner is minimal, and often based on pre-conceived ideas about the learners. This leads the learners to behave in a way that the teacher expects them to, which is often not an accurate representation of who they are. Teachers need to consider the importance of their actions, in order for them to be able to help the learners more effectively.

In general, the factors discussed in this chapter, are those, which should be looked at in more detail, as these are the factors, which, to a large degree, can be manipulated in order to produce more favourable academic outcomes. Programmes can for example be implemented in order to improve the communication between home and school, or to help learners develop a better sense of self-efficacy, or be more motivated and responsible, which will then, in turn, help these learners to perform better academically, and ensure themselves a better future.

RESEARCH METHODS AND PROCEDURES

4.1 INTRODUCTION

This chapter will focus on the various methods and procedures used by the researcher during the course of the study, to try and determine whether certain factors impact positively or negatively on the academic achievement of learners. This will include a discussion on the factors being investigated, the measuring instruments used and the composition and selection of the research sample. A description of the manner in which the data was collected, the statistical procedures used and the research hypotheses will also be given.

As was mentioned in chapter 1, the purpose of this study is to identify factors that influence the academic achievement of black grade 12 learners in the greater Bloemfontein area. More specifically, it can be stated that this study aims to determine to what degree

- a) biographical factors (of both learners and parents);
- b) internal factors (perceptions) of the learners; and
- c) internal factors (perceptions) of their parents,

influence the academic achievement of black grade 12 learners in schools with low grade 12 pass rates (less than 50%) and a high grade 12 pass rates (above 80%) respectively.

4.2 RESEARCH METHOD AND DESIGN

The term research design refers to the plan according to which data, relating to certain variables, is collected in order to investigate a research hypothesis, and usually includes the involvement of research participants (Huysamen, 1994). In this study, pass rate serves as the criterion variable (dependent variable), while the biographical factors, as well as the learners' and their parents' internal factors are the predictor variables (independent variables), being measured. It follows then, that the research design being used in this non-experimental (ex post facto) study, is a prospective research design (Huysamen, 1989; 1994).

Before proceeding to discuss the measuring instruments and data collection process, the criterion and predictor variables will be discussed in more detail.

4.3 DETERMINATION OF VARIABLES

4.3.1 IDENTIFICATION OF VARIABLES

In any ex post facto study there are at least two variables that must be identified, namely the independent variables and the dependent variables. During the course of the study the relationship between these two sets of variables are investigated (Huysamen, 1989). Since the scores on one set of variables, in this study, will be used to predict the results of the other variable, we will refer to the former as the predictor variables, and the latter as the criterion variable. These variables will now be discussed in more detail.

4.3.2 CRITERION VARIABLE

The criterion variable of pass rate was selected in order to divide the research participants into two distinguishable groups, in order to compare the results obtained with respect to the predictor variables, in an attempt to predict a participant's group membership. In this study, schools, whose grade 12 learners would make up the research sample, were

selected on the basis of their grade 12 pass rate. In order to do this, the researcher approached the Education Department of the Free State for a list of the high schools in the area, with their respective grade 12 pass rates over the last two years, namely the 1998 pass rate and the 1999 pass rate. In this instance, pass rate refers to the percentage of grade 12 learners from the respective schools who passed the end of year examination. From this list, two schools with a grade 12 pass rate of more than 80% (namely, more than 80% of the grade 12 learners passed the final examination) over both years, and three schools with a grade 12 pass rate of less than 50% (namely, less than 50% of the grade 12 learners passed the final examination) over both years, were selected. In this way the criterion variables of *high grade 12 pass rate* (above 80%) and *low grade 12 pass rate* (below 50%) were determined.

4.3.3 PREDICTOR VARIABLES

As noted in paragraph 4.1, a number of predictor variables were used in this study. These variables were measured in order to determine whether or not they could predict a learner's group membership, according to the criterion variable. These variables are as follows:

a) Biographical factors, which include:

- Learner's age
- Learner's gender
- Number of siblings that the learner has
- Learner's birth position
- Learner's self-reported physical health
- Learner's intention to study further
- Parents' marital status
- Father's educational qualification
- Mother's educational qualification
- Father's age
- Mother's age

- b) Internal factors related to the learner, which include:
- Communication with parents
 - Sense of value towards schooling
 - Perception of the school / home communication
 - Perception of personal efficacy
 - Perception of learner / teacher collaboration
 - Perception of parent sense of value towards schooling
 - Perception of peer-group values
 - Perception of school climate
 - Perception of teacher caring / respect for individual learner
 - Learner responsibility
- c) Internal factors related to the parents, which include:
- Perception of learner / teacher communication
 - Perception of learner / parent communication
 - Perception of teacher / parent communication
 - Perception of teacher concern about parent involvement
 - Perception of parent / teacher communication
 - Sense of value towards schooling
 - Perception of school climate
 - Perception of parent efficacy
 - Perception of learner responsibility

In order to measure the above-mentioned factors, a questionnaire was compiled by the researcher to obtain the necessary biographical information from the learners, regarding themselves and their parents (see appendix 1), while the perceptions of the learners and their parents (internal factors) were measured by means of a survey for learners and parents respectively, compiled by Coleman (1998). What will follow is a discussion of the different measuring instruments used in the study.

4.4 MEASURING INSTRUMENTS

4.4.1 LEARNER SURVEY

This survey was compiled by Coleman (1998) in order to evaluate the attitudes that learners hold with respect to their schooling and the relationships that are formed within this setting, as well as between the home and the school environments. This survey was used in the present study, to measure the perceptions of learners, with the view to investigating whether or not these perceptions impact on the learner's academic achievement (or group membership). The survey, more specifically, provides scores on ten different sub-scales, measuring the perceptions of the learners.

Administration of the survey requires that the learners mark their response to each question on a scale from one to five. Each sub-scale comprises a number of items, and the responses to the items are then summed and averaged for each sub-scale. The total score for the survey is not taken into consideration. Table 4.1 provides information concerning the number of items in each sub-scale of the learner survey.

Table 4.1: Number of items per sub-scale of the learner survey

Sub-scale	Number of Items
A: Communication with parents	8
B: Learner valuing school	10
C: Perception of school / home communication	7
D: Perception of personal efficacy	8
E: Perception of learner / teacher collaboration	10
F: Perception of parent valuing school	10
G: Perception of peer-group values	8
H: Perception of school climate	10
J: Perception of teacher caring / respect for individual learner	5
K: Learner responsibility	5

The minimum average score that a participant can obtain on a sub-scale is one, while the maximum average score for each sub-scale is five. A low score (i.e. less than three) on a sub-scale has a positive connotation, indicating that the participant has a positive attitude toward, or perception of, the factor being measured. A high score (i.e. above three) indicates that the participant has a more negative attitude toward, or perception of, the factor being measured. A score of three would indicate that the participant took a neutral position with respect to that specific factor.

For the purposes of the statistical analysis in this study however, the raw scores obtained on each sub-scale were used for the calculations, rather than the average scores obtained by each participant. Table 4.2 provides the minimum and maximum raw scores that could be obtained by a learner on the survey.

Table 4.2: Minimum and maximum raw scores for the sub-scales of the learner survey

Sub-scale	Minimum raw score	Maximum raw score
A: Communication with parents	8	40
B: Learner valuing school	10	50
C: Perception of school / home communication	7	35
D: Perception of personal efficacy	8	40
E: Perception of learner / teacher collaboration	10	50
F: Perception of parent valuing school	10	50
G: Perception of peer-group values	8	40
H: Perception of school climate	10	50
J: Perception of teacher caring / respect for individual learner	5	25
K: Learner responsibility	5	25

An important characteristic of any measuring instrument is its reliability. For such an instrument to be reliable, it should, when measuring a certain construct, yield a

comparable result for a specific individual, even when the measuring instrument is administered at different times and by different administrators, or when a different form of the test is administered. For this purpose Cronbach's alpha coefficient was used as a measure of internal consistency, which is an indication of whether or not all the items of a sub-scale measure the same attribute (Huysamen, 1994). Table 4.3 shows the reliability scores of each of the sub-scales present in the learner survey.

Table 4.3: Reliability scores for the sub-scales of the learner survey

Sub-scale	Alpha coefficient
A: Communication with parents	0,7765
B: Learner valuing school	0,5523
C: Perception of school / home communication	0,8764
D: Perception of personal efficacy	0,5362
E: Perception of learner / teacher collaboration	0,6840
F: Perception of parent valuing school	0,7177
G: Perception of peer-group values	0,5078
H: Perception of school climate	0,7980
J: Perception of teacher caring / respect for individual learner	0,7047
K: Learner responsibility	0,5186

According to Huysamen (1996), the reliability coefficient of a standardised test should be greater than 0,85. This is however only the case when the test is designed as a means by which decisions regarding individuals are to be made. When the purpose of the test is to make decisions about groups, it is acceptable for the reliability coefficient to be as low as 0,65. In addition to this, Foster and Parker (1999) state that tests of personality may often have reliabilities that are much lower than the expected 0,8 for tests of cognitive ability, the reason being that personality is a much broader construct. In this case the measurement is of learners' perceptions and it can thus be seen from table 4.3 that, the internal consistency of the sub-scales range from average to high.

4.4.2 PARENT SURVEY

The parent survey, compiled by Coleman (1998), is similar to that of the learner survey, and is used to measure the perceptions of parents, with respect to their child's schooling as well as the relationships that are formed within this setting. This survey was used, in the present study to measure the perceptions of parents, with the view to investigating whether or not these perceptions have an impact on their child's academic achievement (or group membership). More specifically the parent survey provides scores on nine different sub-scales, measuring the perceptions of the parents.

As with the learner survey, each parent is requested to mark their response to each question on a scale from one to five. Each sub-scale comprises a number of items, and the responses to the items are then summed and averaged for each sub-scale. The total score for the survey is not taken into consideration. Table 4.4 provides information concerning the number of items in each sub-scale of the parent survey.

Table 4.4: Number of items per sub-scale of the parent survey

Sub-scale	Number of Items
L: Perception of learner / teacher communication	11
M: Perception of learner / parent communication	8
N: Perception of teacher / parent communication	12
P: Perception of teacher concern about parent involvement	9
Q: Perception of parent / teacher communication	4
R: Parent values school	8
S: Perception of school climate	7
T: Perception of parent efficacy	5
U: Perception of learner responsibility	6

Once again, as with the learner survey, the minimum average score that can be obtained by a participant on any one sub-scale is one, while the maximum average score for each

sub-scale is five. A low score (i.e. less than three) has a positive connotation, and gives an indication that the participant has a positive attitude toward, or perception of, the factor being measured. A high score (i.e. above three) indicates that the participant has a more negative attitude toward, or perception of, the factor being measured, while a score of three indicates a neutral position.

For the purposes of the statistical analysis in this study, the raw scores obtained on each sub-scale were used for the calculations, rather than the average scores obtained by each participant. Table 4.5 provides the minimum and maximum raw scores that could be obtained by parents on the survey.

Table 4.5: Minimum and maximum raw scores for the sub-scales of the parent survey

Sub-scale	Minimum raw score	Maximum raw score
L: Perception of learner / teacher communication	11	55
M: Perception of learner / parent communication	8	40
N: Perception of teacher / parent communication	12	60
P: Perception of teacher concern about parent involvement	9	45
Q: Perception of parent / teacher communication	4	20
R: Parent values school	8	40
S: Perception of school climate	7	35
T: Perception of parent efficacy	5	25
U: Perception of learner responsibility	6	30

The reliability scores of the sub-scales of the parent survey, according to Cronbach's alpha coefficient, are provided in table 4.6.

Table 4.6: Reliability scores for the sub-scales of the parent survey

Sub-scale	Alpha coefficient
L: Perception of learner / teacher communication	0,8269
M: Perception of learner / parent communication	0,8364
N: Perception of teacher / parent communication	0,9128
P: Perception of teacher concern about parent involvement	0,8823
Q: Perception of parent / teacher communication	0,8467
R: Parent values school	0,6978
S: Perception of school climate	0,7405
T: Perception of parent efficacy	0,6986
U: Perception of learner responsibility	0,4836

As mentioned in paragraph 4.4.1, it is preferable that the reliability coefficients of the sub-scales are greater than 0,65. In the case of the parent survey, it can be seen from table 4.6 that the alpha coefficient implies that the internal consistency of the sub-scales range from average to high.

A discussion concerning the manner in which the data was collected will follow in the next section.

4.5 DATA COLLECTION

A research sample was obtained, by selecting five schools from the black secondary schools in Bloemfontein. The five schools selected fell into two predetermined categories, namely those schools with an above 80 percent grade 12 pass rate over the past two years (two schools), and those with a below 50 percent grade 12 pass rate over the same time period (three schools). All the grade 12 learners in the respective schools then formed the research sample, together with their parents.

It was decided that a research sample comprising 150 learners and their parents from schools with a high pass rate and 150 learners and their parents from schools with a low pass rate, be used in the study. The researcher thus decided to distribute approximately 600 questionnaires (300 to the schools with a high pass rate and 300 to the schools with a low pass rate). The reason being that it often occurs that not all the participants respond, and for this reason it is often advisable to draw a larger sample than is needed in final data set (Huysamen, 1994). In this study it was calculated that if only half the participants responded, the research sample would still be large enough.

The researcher approached the principals of each of the selected schools, in order to obtain permission to do the research. It was decided that the group of honours students in psychology who volunteer at the schools would distribute the questionnaires, allow the learners to fill them in at home, and then collect them again. This would ensure that valuable school time would not be used for this purpose. The learners were required to complete the biographical questionnaire compiled by the researcher, as well as Coleman's Student Survey (1998). Their parents were requested to complete Coleman's Parent Survey (1998).

During the course of the research a number of problems were encountered. The biggest problem was the fact that the majority of the learners did not return the questionnaires, or returned them without completing them. The students who distributed and collected the questionnaires went to great lengths to motivate the learners to return them, but this was to no avail. As mentioned above, the researcher distributed approximately 600 questionnaires to the learners and the same amount to their parents, and only 273 questionnaires were returned by the learners, while only 147 parents responded. The result was that the analysis was based on a highly selective sample of learners and parents. This posed a possible problem, in that the smaller than expected sample size could have negatively influenced the resulting analysis, as the reliability of a sample depends on the sample size used (Cohen, 1988). A disturbing aspect, in this regard, is the fact that although it was explained to the learners that this research could benefit them, in helping them to achieve better academically, they were not interested in providing

assistance. This nonchalant attitude alone could have a negative effect on their school work.

A second problem that was encountered is the fact that, although the school principals were more than willing to allow the research to be done in their schools, it was often difficult to make contact with the principals, and even though appointments were made well in advance, principals were at times not available on the day of the appointment. There was even a case where a new principal was appointed at one of the schools, who knew nothing about the research as he was obviously not informed by the previous principal, with whom arrangements had been made regarding the research. This made it difficult for the researcher to effectively co-ordinate with the university students who were helping to distribute the questionnaires at the schools.

The research sample, in terms of their group membership, with respect to schools with high pass rates and low pass rates will now be discussed.

4.6 COMPOSITION OF THE RESEARCH SAMPLE

The research sample comprised learners and their parents from two predetermined groups. The first group consisted of those learners (and parents) from schools with a high grade 12 pass rate for the end of 1998 and 1999. The second group was made up by learners (and parents) from schools with a low grade 12 pass rate for the end of 1998 and 1999. Table 4.7 provides information pertaining to the distribution of the research sample, with respect to the number of learners and their parents who responded to the questionnaires, from schools with high pass rates and low pass rates respectively.

Table 4.7: Frequency distribution of the original research sample.

Pass Rate	Learners		Parents	
	N	%	N	%
High	76	27,8	68	46,3
Low	197	72,2	79	53,7
TOTAL	273	100,0	147	100,0

From table 4.7 it can be seen that:

- a) a greater number of learners from the schools with a low pass rate responded to the questionnaires, than did those learners from schools with a high pass rate. To be more specific 72,2% of learners from schools with a low pass rate responded in comparison to the 27,8% of learners from schools with a high pass rate. The reason for this could be the fact that the learners from schools with a high pass rate are perhaps not as concerned about improving their academic achievement, which the research was aimed at helping with, as they felt that their scholastic performance was satisfactory. The learners from schools with lower pass rates on the other hand may have felt that something needs to be done in order to help them to perform better academically, and thus were more willing to help. What is however unfortunate, is the fact that the willingness to participate may also have been an indication of the tendency, by these lower achieving learners, to avoid their actual schoolwork, in the hope that someone else would solve the problem of low academic achievement for them. This attitude could, in turn, be an indication of a lack of responsibility on the part of the learners.
- b) 89,5% of the learners (68 of the 76), from the schools with high pass rates, parents responded to the questionnaires, in comparison to the 79 of the 197, in other words 40,1% of the learners in the schools with low pass rates whose parents responded. This could be an indication that there is a greater degree of parental involvement present in learners who hail from schools with a high pass rate. It was seen in the literature review, that there is a discrepancy as to whether high achievement in

schools, and in learners themselves, results in increased levels of parental involvement, or whether parental involvement motivates high achievement (Cherian, 1993; Griffith, 1996; Stevenson & Baker, 1987). This is once again the case here. It is difficult to say whether the more effective schools promote more parental involvement, with the result that more parents responded to the questionnaires, or if it is the case that because these parents are more involved with their children, and want to assist in any way that they can, that their children perform better academically.

An aspect of the research sample that required further investigation, was the fact that the number of learners from schools with low pass rates who responded to the questionnaires was noticeably larger than that of the learners from schools with high pass rates who responded. In order to rectify this imbalance, it was decided to randomly draw 80 learners from the group of learners from the schools with a low pass rate. The following procedure was followed:

- Firstly, all the research participants, forming part of the group of learners from schools with low pass rates, were numbered from 001 to 197.
- Secondly, the 80 research participants were then identified by making use of a table of random numbers (Huysamen, 1989). In an entirely random fashion (with pen placed on table) it was determined that the 5th row and the 9th column's numbers would be used as a starting point. Thereafter the numbers were recorded in sets of three from left to right (starting at the intersection of row 5 with column 9 of the table). Continuing in this fashion, a total of 80 research participants were obtained, to form the final resulting research sample of learners from schools with a low pass rate.

The distribution of the final resulting research sample, with respect to the two groups of learners, from schools with high pass rates and low pass rates respectively, is provided in Table 4.8.

Table 4.8: Frequency distribution of the final resulting research sample, with respect to their pass rates

Pass Rate	Learners	
	N	%
High	76	48,7
Low	80	51,3
TOTAL	156	100,0

The distribution of the two groups was now more equivalent, although there are still slightly more learners from the schools with low pass rates, than there are from schools with high pass rates.

It must be kept in mind that the original research sample comprising the learner's parents will be used in the data analysis, while the final resulting sample will be used for the data analysis of the learners responses.

4.7 RESEARCH HYPOTHESES

The following research hypotheses were formulated:

Hypothesis 1:

Biographical factors of learners and their parents, can predict group membership of learners belonging to two groups, those from schools with a high grade 12 pass rate (more than 80 percent) and those from schools with a low grade 12 pass rate (less than 50 percent).

Hypothesis 2:

Internal factors related to learners, can predict group membership of learners belonging to two groups, those from schools with a high grade 12 pass rate (more than 80 percent) and those from schools with a low grade 12 pass rate (less than 50 percent).

Hypothesis 3:

Internal factors related to learner's parents, can predict group membership of learners belonging to two groups, those from schools with a high grade 12 pass rate (more than 80 percent) and those from schools with a low grade 12 pass rate (less than 50 percent).

What will follow, is an overview of the statistical procedures used to analyse the data in this study.

4.8 STATISTICAL PROCEDURE

As can be seen from the research hypothesis (see paragraph 4.7) it is clear that the criterion variable (dependent variable), is dichotomous in nature, in that it comprises two groups, namely schools with a high grade 12 pass rate and schools with a low grade 12 pass rate. Furthermore, it can be seen that the predictor variables (independent variables) are in some cases categorical (biographical factors) and in other cases they are continuous in nature (internal factors).

In this case it is possible to make use of a discriminant analysis. However, both Howell (1997) and Everitt (1996) argue that discriminant analysis does in fact have a number of setbacks. In the first place, it is possible that a probability for success can be produced that does not lie within the range of 0 and 1, a probability which is thus not possible. Secondly, it is expected, with discriminant analysis, that the independent variables must lie on a normal distribution curve, which is in some cases not realistic. As a result of this, both authors conclude that logistic regression is the technique of choice, as it:

- a) results in probabilities that lie within the range of 0 and 1; and
- b) there are no restrictive assumptions regarding the normality of the independent variables, which may be categorical or continuous.

When working with two groups of research participants, we class these individuals according to predetermined categories. In this study the chosen categories were based on pass rate, namely high grade 12 pass rate and low grade 12 pass rate. When classing a

learner as having a high pass rate, it does not necessarily mean that the individual learner has a high pass rate, but that the learner belongs to the group of learners who hail from schools with a high pass rate, which is determined by a specific cut-off value, namely 80%. It is then similar that a learner with a low pass rate simply implies that the learner hails from the group classed as having a low pass rate based on the cut-off value of 50%. This, according to Howell (1997) is called censored data, and applying linear regression to this censored data forms the crux of logistic regression.

In the following chapter the results of the logistic regression analysis will be given, as well as the descriptive statistics (frequency, means, and standard deviations) of the predictor variables.

RESULTS, INTERPRETATIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

A discussion of the quantitative results as they pertain to the statistical procedures will be provided in this chapter. The conclusions drawn from the results will also be discussed.

However, before discussing the results of the stepwise logistic regression analysis, the descriptive statistics (frequencies, means and standard deviations) of all the relevant independent variables for the two groups (learners from schools with high pass rates and those from schools with low pass rates) will be presented and discussed.

5.2 DESCRIPTIVE STATISTICS

5.2.1 BIOGRAPHICAL VARIABLES

The descriptive statistics (frequencies) with respect to the biographical variables, which form part of the predictor variables of the two groups, are given in table 5.1 (a – k). (The codes given in brackets, in the tables, indicate the values that were assigned to each category during the logistic regression analysis.)

Table 5.1(a): Frequency distribution of the research group according to their ages

Age	High		Low		Total	
	Pass rate		pass rate			
	N	%	N	%	N	%
17 – 19 years (0)	53	70,7	36	45,0	89	57,4
Older than 19 years (1)	22	29,3	44	55,0	66	42,6
Total	75	48,4	80	51,6	155	100,0

It can be seen from table 5.1(a) that there were considerably more “older” learners (55,0%) in schools with low pass rates than there were in schools with high pass rates (29,3%). Similarly there were more “younger” learners in the schools with high pass rates than in those with low pass rates (70,7% compared to 45,0%).

Table 5.1(b): Frequency distribution of the research group according to their gender

Gender	High		Low		Total	
	Pass rate		pass rate			
	N	%	N	%	N	%
Male (0)	31	41,3	29	37,2	60	39,2
Female (1)	44	58,7	49	62,8	93	60,8
Total	75	49,0	78	51,0	153	100,0

From table 5.1(b) it can be seen that the research sample consisted of more female learners than male learners (60,8% compared to 39,2%), and that the male learners were better represented in the schools with high pass rates, than in schools with low pass rates.

Table 5.1(c): Frequency distribution of the research group according to the number of siblings that they have

Number of siblings	High pass rate		Low pass rate		Total	
	N	%	N	%	N	%
Two and less (1)	44	57,9	45	56,3	89	57,1
Three and more (0)	32	42,1	35	43,8	67	42,9
Total	76	48,7	80	51,3	156	100,0

According to table 5.1(c) those learners with two or less siblings and those with three or more siblings were equally represented in the schools with high and low pass rates. There was however a larger number of learners with two or less siblings, compared to those with three or more siblings, in the total research sample (57,1% compared to 42,9%).

Table 5.1(d): Frequency distribution of the research group according to their birth position

Birth position	High pass rate		Low pass rate		Total	
	N	%	N	%	N	%
Oldest (0)	34	48,6	34	44,2	68	46,3
Youngest (1)	20	28,6	30	39,0	50	34,0
Other (2)	16	22,9	13	16,9	29	19,7
Total	70	47,6	77	52,4	147	100,0

From table 5.1(d) it is clear that there were more learners who were oldest children in the total research sample (46,3%) compared to those learners who were youngest (34,0%) and those who were neither youngest nor oldest (19,7%). The oldest children were better represented in schools with high pass rates.

Table 5.1(e): Frequency distribution of the research group according to their self-reported state of physical health

Self-reported physical health	High pass rate		Low pass rate		Total	
	N	%	N	%	N	%
Yes (healthy) (1)	71	94,7	67	88,2	138	91,4
No (not healthy) (0)	4	5,3	9	11,8	13	8,6
Total	75	49,7	76	50,3	151	100,0

There were considerably more healthy learners (91,4%) in the research sample, than there were learners with health problems (8,6%), as can be seen from table 5.1(e). These healthy learners also tended to hail more from schools with high pass rates.

Table 5.1(f): Frequency distribution of the research group according to their intention to study further

Intention to study further	High pass rate		Low pass rate		Total	
	N	%	N	%	N	%
Yes (1)	68	90,7	76	96,2	144	93,5
No (0)	7	9,3	3	3,8	10	6,5
Total	75	48,7	79	51,3	154	100,0

As can be seen from table 5.1(f), the total research sample consisted of considerably more learners who intended to study further (93,5%) than learners who did not intend to study further (6,5%).

Table 5.1(g): Frequency distribution of the research group according to their parents' marital status

Parents' marital status	High pass rate		Low pass rate		Total	
	N	%	N	%	N	%
Married (1)	28	37,3	49	62,8	77	50,3
Other (0)	47	62,7	29	37,2	76	49,7
Total	75	49,0	78	51,0	153	100,0

From table 5.1(g) it can be seen that there were more learners with married parents in the schools with low pass rates (62,8%) than there were in the schools with high pass rates (37,3%).

Table 5.1(h): Frequency distribution of the research group according to their father's highest educational qualification

Father's highest educational qualification	High pass rate		Low pass rate		Total	
	N	%	N	%	N	%
Lower than grade 10 (0)	23	37,7	44	61,1	67	50,4
Higher than grade 10 (1)	38	62,3	28	38,9	66	49,6
Total	61	45,9	72	54,1	133	100,0

According to table 5.1(h) more learners, whose fathers had a educational qualification of higher than grade 10, hailed from schools with high pass rates (62,3%) than from schools with low pass rates (38,9%).

Table 5.1(i): Frequency distribution of the research group according to their mother's highest educational qualification

Mother's highest educational qualification	High pass rate		Low pass rate		Total	
	N	%	N	%	N	%
Lower than grade 10 (0)	29	39,7	48	61,5	77	51,0
Higher than grade 10 (1)	44	60,3	30	38,5	74	49,0
Total	73	48,3	78	51,7	151	100,0

It is clear from table 5.1(i) that there were considerably more learners, whose mother's had an educational qualification of higher than grade 10, in schools with high pass rates than in schools with low pass rates (60,3% compared to 38,5%).

Table 5.1(j): Frequency distribution of the research group according to their father's age

Father's age	High Pass rate		Low pass rate		Total	
	N	%	N	%	N	%
49 years and younger (1)	53	69,7	42	52,5	95	60,9
Older than 49 years (0)	23	30,3	38	47,5	61	39,1
Total	76	48,7	80	51,3	156	100,0

Learners, whose fathers were 49 years and younger, were better represented in the total research sample than learners whose fathers were older than 49 years (60,9% compared to 39,1%), as can be seen in table 5.1(j). In addition to this, those learners with younger fathers tended to hail, more often, from schools with high pass rates (69,7%) than from schools with low pass rates (52,5%).

Table 5.1(k): Frequency distribution to the research group according to their mother's age

Mother's age	High		Low		Total	
	Pass rate		pass rate			
	N	%	N	%	N	%
49 years and younger (1)	60	78,9	61	76,3	121	77,6
Older than 49 years (0)	16	21,1	19	23,8	35	22,4
Total	76	48,7	80	51,3	156	100,0

According to table 5.1(k) the research sample was made up of more learners, whose mothers were 49 years and younger, than learners whose mothers were older than 49 years (77,6% compared to 22,4%).

What will now follow is, a discussion with regards to the descriptive statistics of the internal factors related the learners and their parents, respectively.

5.2.2 INTERNAL FACTORS RELATED TO LEARNERS AND PARENTS

The descriptive statistics (means and standard deviations) with respect to the internal factors related to the learners from schools with high and low pass rates, as well as the statistics of those factors related to their parents, are provided in table 5.2 and table 5.3, respectively. It must be kept in mind that the average scores have been used here, so that the calculated means of each sub-scale are more meaningful, according to the minimum and maximum average scores that can be obtained (see paragraph 4.4.1 and 4.4.2). The implications of these calculated means for the sub-scales of both the learner and parent surveys will also be discussed in more detail.

Table 5.2: Means and standard deviations of the internal factors of learners in schools with high and low pass rates respectively

Internal factors of learners	High pass rate			Low pass rate		
	N	\bar{X}	s	N	\bar{X}	s
A: Communication with parents	70	2,11	0,74	66	1,91	0,68
B: Learner valuing school	67	1,67	0,37	55	1,64	0,41
C: Perception of school / home communication	72	2,80	0,10	67	2,53	0,94
D: Perception of personal efficacy	69	2,06	0,45	68	2,15	0,49
E: Perception of learner / teacher collaboration	70	1,89	0,47	69	1,91	0,51
F: Perception of parent valuing school	69	1,75	0,50	69	1,70	0,45
G: Perception of peer-group values	67	2,02	0,42	67	1,90	0,47
H: Perception of school climate	66	1,88	0,69	66	1,95	0,54
J: Perception of teacher caring / respect for individual learner	69	1,90	0,64	72	1,87	0,60
K: Learner responsibility	68	2,20	0,65	69	2,00	0,57

From table 5.2 it can be seen that the means for all the sub-scales of the learner survey, for learners from schools with high and low pass rates, are below three, indicating that the learners tend to have a positive perception or view of all the factors measured by the survey.

The descriptive statistics (means and standard deviations) pertaining to the parent survey will now be given and discussed in more detail.

Table 5.3: Means and standard deviations of the internal factors of learners' parents in schools with high and low pass rates respectively

Internal factors of parents	High pass rate			Low pass rate		
	N	\bar{X}	s	N	\bar{X}	s
L: Perception of learner / teacher communication	61	2,16	0,58	72	2,01	0,57
M: Perception of learner / parent communication	61	2,17	0,67	75	1,92	0,75
N: Perception of teacher / parent communication	57	2,93	0,96	72	2,67	0,88
P: Perception of teacher concern about parent involvement	60	2,15	0,81	74	2,14	0,71
Q: Perception of parent / teacher communication	62	2,22	0,95	73	2,00	0,79
R: Parent values school	59	1,58	0,50	73	1,47	0,39
S: Perception of school climate	62	1,79	0,53	66	2,08	0,59
T: Perception of parent efficacy	60	2,30	0,78	71	2,07	0,71
U: Perception of learner responsibility	60	2,00	0,53	75	1,93	0,46

It can be seen from the mean scores in table 5.3, that the learners' parents also showed a positive view towards the factors being measured by the survey, as the scores lie between one and three, for both groups, those from schools with high pass rates and those with low pass rates.

The results of the stepwise logistic regression analysis, with respect to the biographical factors, as well as the internal factors related to the learners and their parents, will be presented in the following section. A more detailed discussion hereof, will also be given.

5.3 STEPWISE LOGISTIC REGRESSION ANALYSIS

As can be seen from paragraph 4.7, it was decided to perform the analysis in three phases, due to the large number of independent variables being investigated. Firstly the

biographical variables (both learners' and parents') will be used as independent variables in a stepwise logistic regression analysis, thereafter the internal factors of the learners will be used in the same way, and lastly the internal factors of the parents will be included.

Logistic regression is applicable when the dependent variable in question is dichotomous. In this case the dependent variable is group membership, and for the purpose of the study, a code of 0 was assigned to a learner who hails from a school with a high pass rate, while a code of 1 was assigned to learners from schools with a low pass rate. The analysis was done with the help of the SAS-program. It is important to note that SAS computes a model for predicting the lower value, which in this case is 0, or membership to the group with high pass rates.

5.3.1 BIOGRAPHICAL VARIABLES

Firstly, the biographical variables were used as independent variables in a stepwise logistic regression analysis, the results of which appear in table 5.4.

Table 5.4: Results of the logistic regression analysis, with biographical variables as the independent variables

Step	Variable	χ^2 - test for the fit of the model			v	p
		Without predictors	With predictors	Difference		
One	Age	159,947	144,238	15,709	1	0,0001
Two	Study further	159,947	136,003	23,945	2	0,0001
Three	Marital status (parents)	159,947	129,767	30,180	3	0,0001

During the first step of the analysis, the variable *age of learner* was added to the logistic regression equation. A χ^2 -value of 15,709 was obtained, when it was tested whether the fit of the model with predictors was significantly better than the fit of the model without predictors ($159,947 - 144,238 = 15,709$). At this stage, only one predictor was included

in the model, with the result that the degrees of freedom = 1. The decrease in χ^2 thus indicates that the variable (*age of learner*) does indeed make a significant ($p = 0,0001$) contribution to the prediction of group membership of learners from schools with different pass rates.

During step two, the variable *intention to study further* was added to the equation. Now two predictors formed part of the regression model, with the result that the degrees of freedom = 2. At this stage the decrease in χ^2 is greater ($159,947 - 136,003 = 23,945$) than in the case where only one predictor was included in the model. As a result it can be accepted that the two predictors that, at this stage, form part of the regression model, both make a significant ($p = 0,0001$) contribution to the prediction of group membership of learners from schools with different pass rates.

Step three entailed the addition of the variable *marital status of parents* to the equation. Now three predictors formed part of the regression model, with the result that the degree of freedom = 3. After the addition of these three predictors to the regression model, the decrease in χ^2 is $159,947 - 129,767 = 30,18$. This decrease means that the three predictors forming part of the regression model at this stage, did indeed make a significant ($p = 0,0001$) contribution to the prediction of group membership of learners from schools with different pass rates.

In order to test each predictor's contribution, an analysis of maximum likelihood estimates was performed, the results of which appear in table 5.5.

Table 5.5: Results concerning the maximum likelihood estimates

Variables	Coefficient	Standard error	Wald χ^2	p
Intercept	3,3433	1,0231	10,68	0,0011
Age (age)	- 1,9688	0,5144	14,65	0,0001
Study further (study)	- 2,4019	0,9603	6,26	0,0124
Marital status (mar)	- 1,0620	0,4318	6,05	0,0139

It is clear from table 5.5 that the optimal logistic regression equation is as follows:

$$\text{Log odds} = -1,9688 \text{ age} - 2,4019 \text{ study} - 1,062 \text{ mar} + 3,3433$$

The regression coefficients of the three predictors indicates that:

- a) an increase of one point in *age* will reduce the log odds of a high pass rate by 1,9688 points. In order to work with odds, we simply exponentiate the coefficient. In this case it means that $e^{-1,9688} = 0,1396$, in other words an increase of 1 point in *age* (older group) multiplies the odds of a high pass rate by approximately 0,14, thus reducing them. It must be kept in mind that the odds of a high pass rate will be equal to inverse of the odds of a low pass rate. Considering the fact that the predictor variable is dichotomous, it can in this case be concluded, if all the other variables remain the same, that an older learner will be approximately 7 times more likely to be from a school with a low pass rate, than from a school with a high pass rate.
- b) an increase of one point in *study* will reduce the log odds of a high pass rate by 2,4019 points. In this case the odds = $e^{-2,4019} = 0,0905$, in other words this means that an increase of one point in *study* (intention to study further) multiplies the odds of a high pass rate by approximately 0,09, thus reducing them. Considering the fact that this predictor variable is also dichotomous, it can once again be concluded, if all the other variables remain the same, that a learner who intends to study further is approximately 11 times more likely to be from a school with a low pass rate, than from a school with a high pass rate.
- c) an increase of one point in *mar* will reduce the log odds of a high pass rate by 1,062. In this case the odds = $e^{-1,062} = 0,3458$, in other words this means that an increase of 1 point in *mar* (parents married) multiplies the odds of a high pass rate by approximately 0,35, thus reducing them. This predictor variable is also dichotomous, and it can thus be concluded, if all the other variables were to remain the same, that a learner whose parents are married is approximately 3 times more likely to be from a school with a low pass rate, than from a school with a high pass rate.

In conclusion, the association between the predicted probabilities and the actual responses can also be indicated. In table 5.6 the information, concerning the association between the predicted probabilities of group membership and the actual group membership of the learners, after the addition of the three biographical variables (age of learner, intention to study further and parental marital status) to the logistic regression equation, is provided.

Table 5.6: Association of predicted probabilities and observed responses

Association	%
Concordant	66,4%
Discordant	13,7%
Tied	19,9%

Thus, with the use of the three predictor variables (age, study and mar), it was possible, in 66,4% of the cases, to successfully predict the same outcome (high pass rate), as what was actually attained.

5.3.2 INTERNAL FACTORS RELATED TO LEARNERS

Secondly, the internal factors related to the learners were used as independent variables in a stepwise logistic regression analysis, the results of which appear in table 5.7.

Table 5.7: Results of the logistic regression analysis with internal factors related to the learners as independent variables

Step	Variable	χ^2 - tests for the fit of the model			v	p
		Without predictors	With predictors	Difference		
One	Scale A	139,987	129,857	10,13	1	0,0015

Only one variable, namely *scale A (communication with parents)* was added to the logistic regression equation. A χ^2 -value of 10,13 was obtained, when it was tested

whether the fit of the model with predictors was significantly better than the fit of the model without predictors ($139,987 - 129,857 = 10,13$). At this stage only one predictor was included in the model, with the result that the degrees of freedom = 1. The decrease in χ^2 thus indicates that the variable (*communication with parents*) does indeed make a significant ($p = 0,0015$) contribution to the prediction of group membership of learners from schools with different pass rates.

In order to test this predictor's contribution, an analysis of maximum likelihood estimates was performed, the results of which are provided in table 5.8.

Table 5.8: Results concerning the maximum likelihood estimates

Variable	Coefficient	Standard error	Wald χ^2	p
Intercept	- 1,7439	0,6979	6,24	0,0125
Scale A	1,0227	0,3528	8,40	0,0037

It is clear from table 5.8 that the optimal logistic regression equation is as follows:

$$\text{Log odds} = 1,0227 \text{ scale } A - 1,7439$$

The regression coefficient of the predictor variable indicates that an increase of one point in *scale A* (*communication with parents*) will increase the log odds of a high pass rate by 1,0227 points. In order to work with odds we simply exponentiate the coefficient. In this case it means that $e^{1,0227} = 2,7807$, in other words this means that an increase of 1 point in scale A multiplies the odds of a high pass rate by approximately 3. Thus, a learner with a high score on scale A (indicating a poor degree of communication between learner and parent) is 3 times more likely to be from a school with a high pass rate than from a school with a low pass rate.

In conclusion, the association between the predicted probabilities and the actual responses can also be shown. In table 5.9 the information is given, concerning the association

between the predicted probabilities of group membership and the actual group membership of learners, after the addition of the one variable (scale A) to the logistic regression equation.

Table 5.9: Association of predicted probabilities and observed responses

Association	%
Concordant	65,2%
Discordant	29,3%
Tied	5,5%

Thus, with the use of the one predictor variable (scale A), it was possible, in 65,2% of the cases, to successfully predict the same outcome (high pass rate), as what was actually attained.

5.3.3 INTERNAL FACTORS RELATED TO LEARNERS' PARENTS

Thirdly the internal factors related to the learners' parents were used as independent variables in a stepwise logistic regression analysis, the result of which appear in table 5.10.

Table 5.10: Results of the logistic regression analysis with internal factors of learners' parents as independent variables

Step	Variable	χ^2 - test for the fit of the model			v	p
		Without predictors	With predictors	Difference		
One	Scale S	149,127	142,042	7,085	1	0,0078
Two	Scale L	149,127	127,332	21,795	2	0,0001

During the first step the variable *scale S* (*perception of school climate*) was added to the logistic regression equation. A χ^2 -value of 7,085 was obtained, when it was tested

whether the fit of the model with predictors was significantly better than the fit of the model without predictors ($149,127 - 142,042 = 7,085$). At this stage only one predictor was included in the model, with the result that the degrees of freedom = 1. The decrease in χ^2 thus indicates that the variable (*perception of school climate*) does indeed make a significant ($p = 0,0078$) contribution to the prediction of group membership of learners from schools with different pass rates.

During step two the variable *scale L (perception of learner/teacher communication)* was added to the logistic regression equation. Now there were two predictors forming part of the regression model, with the result that the degrees of freedom = 2. At this stage the decrease in χ^2 is greater ($149,127 - 127,332 = 21,795$) than when only one predictor was included in the model. As a result it can be accepted that the two predictors included in the regression model at this stage, both make a significant ($p = 0,0001$) contribution to the prediction of group membership of learners from schools with different pass rates.

In order to test each predictor's contribution, an analysis of maximum likelihood estimates was performed, the results of which are provided in table 5.11.

Table 5.11: Results concerning the maximum likelihood estimates

Variable	Coefficient	Standard error	Wald χ^2	p
Intercept	0,4896	0,8393	0,3403	0,5597
Scale S	- 2,4016	0,5973	16,16	0,0001
Scale L	1,8818	0,5350	12,37	0,0004

It is clear from table 5.11 that the optimal logistic regression equation is as follows:

$$\text{Log odds} = - 2,4016 \text{ scale } S + 1,8818 \text{ scale } L - 0,4896$$

The regression coefficients of the two predictors indicate that:

- a) an increase of one point in *scale S (perception of school climate)* will reduce the log odds of a high pass rate by 2,4016 points. In order to express this in terms of odds, it means that $e^{-2,4016} = 0,0905$, which means that an increase of 1 point in scale S multiplies the odds of a high pass rate by approximately 0,09, thereby reducing them. Thus, a learner, whose parents obtained a high score on scale S (indicating a negative perception of school climate) is 11 times more likely to be from a school with a low pass rate, than from a school with a high pass rate.
- b) an increase of one point in *scale L (perception of learner/teacher communication)* will increase the log odds of a high pass rate by 1,8818 points. In this case $e^{1,8818} = 6,5653$, which means that an increase of 1 point in scale L multiplies the odds of a high pass rate by approximately 6,6. Thus, a learner, whose parents obtained a high score on scale L (indicating a negative perception of learner/teacher communication) is 6,6 times more likely to be from a school with a high pass rate, than from a school with a low pass rate.

In conclusion, the association between the predicted probabilities and the actual responses can also be shown. In table 5.12 the information is given, concerning the association between the predicted probabilities of group membership and the actual group membership of learners, after the addition of the two variables (scale S and scale L) to the logistic regression equation.

Table 5.12: Association of predicted probabilities and observed responses

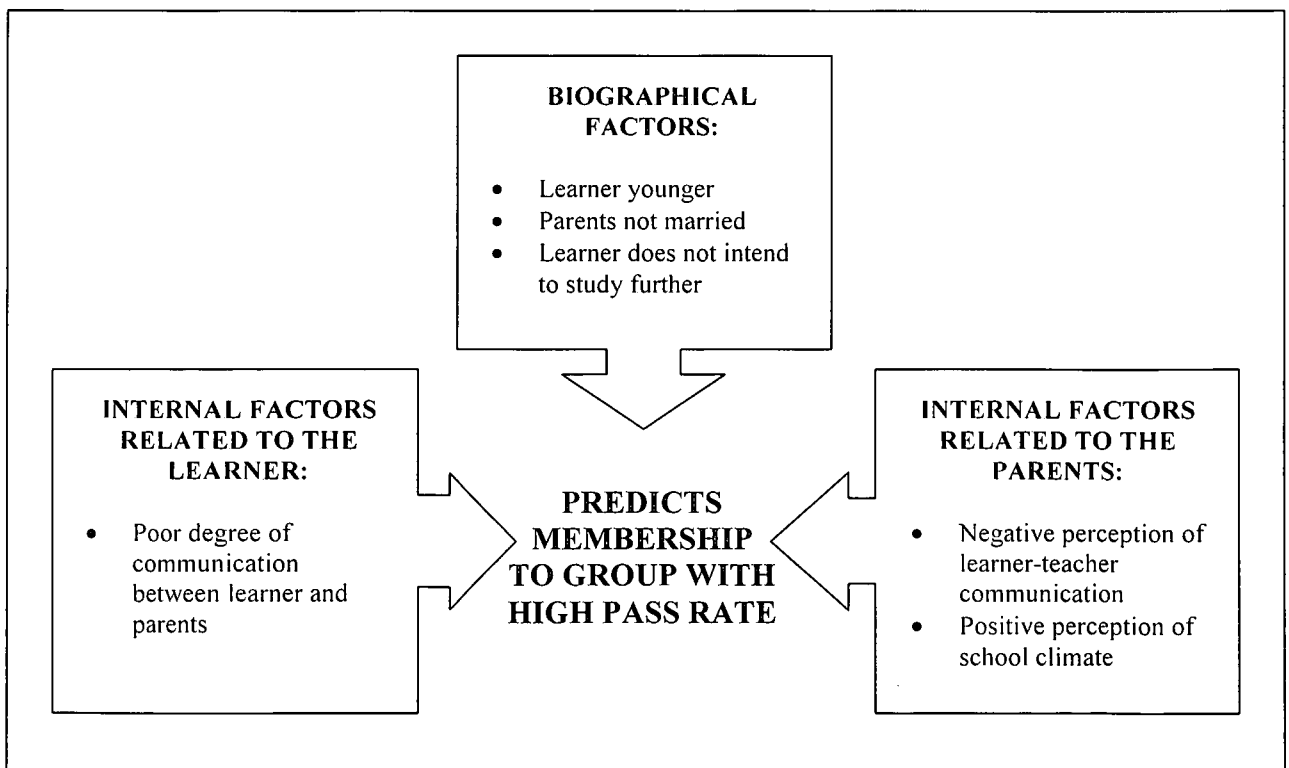
Association	%
Concordant	73,6%
Discordant	23,5%
Tied	2,9%

Thus, with the use of the two predictor variables (scale S and scale L), it was possible, in 73,6% of the cases, to successfully predict the same outcome (high pass rate), as what was actually attained.

5.4 SUMMARY AND CONCLUSIONS

In this section an attempt will be made to give possible interpretations of the results that were reported in section 5.3, and of which a graphic representation is provided in figure 5.1. It will also be attempted to explain these findings in terms of the theoretical overview offered in the literature review in chapters 2 and 3. The findings with regards to the biographical factors will be discussed first, followed by those related to the internal learner factors, and lastly the results related to the internal factors of the learners' parents, will be dealt with.

Figure 5.1: Findings with respect to the variables predicting pass rate



The biographical factors which were found to significantly contribute to the prediction of pass rate, was the age of the learner, the learner's intention to study further, and the marital status of the learner's parents. These will now be discussed in more detail.

The age of the learner was found to influence pass rate, in that the learners who were younger stood a better chance of belonging to the group of learners from schools with a high pass rate, than did older learners. This is in agreement to what was found in the literature review. Van der Watt de Beer (1980), for example, found that learners who were 17-years-old, and who thus, by implication, entered school at the expected age and did not repeat any grades, performed academically better than did those learners who were older.

Those learners, who stated that they intended to study further, were found to be less likely to belong to the group of learners from schools with a high pass rate, than did those learners who did not intend to continue with higher education. This is in contrast to what is stated in the literature review in chapter 2. De La Bat (1991) found that achievement motivation, which can be related to the intention to study further, had a positive relationship with scholastic achievement. This achievement motivation, which can be described as an individual's need to achieve (Day, 1990), has clearly been seen in learners who would like to study further after school. In this day and age both parents and society often expect, learners to study further after school, and learners themselves then automatically assume that they will. It is thus possible that the indication that the learners gave, with respect to wanting to study further was rather a reflection of what was expected of them, than a genuine desire to further their studies. If this is the case, it can be expected that the level of achievement motivation present in these learners is lower than it would be if the desire to study further was a more intrinsic one. The absence of achievement motivation, the very factor that promotes academic performance, may then be the reason why the findings in this study are in direct contrast to what would have been expected, according to the literature.

A learner's parents' marital status was also found to play a contributory role in predicting group membership. Those learners whose parents were married were more likely to

belong to the group of learners from schools with a low pass rate than those learners whose parents were, either divorced, widowed, or single. According to Clark (1983) it is not the physical composition of the family (namely the presence of one or two parents) that plays a role in the academic achievement of the child, but rather the patterns of interaction present in the family. These interaction patterns include the relationships between all the respective family members, as well as the internal perceptions and beliefs of the individual members. He too found that there was little difference in the scholastic performance of children from one-parent and two-parent homes, respectively.

It was found too, that a poor degree of communication between learners and their parents served to benefit the learners in terms of academic achievement. The fact that this finding is in contrast to what was stated in the literature may be due to the fact that the sample used was a highly selective one, in which the lack of parent-learner communication may be a direct result of cultural influences. It is thus difficult to compare this relationship to those in other parts of the world, where research has previously been done. Another consideration is that learners may have filled the questionnaires out in such a way as to impress, or be accepted by peers, who feel that a rebellious and negative parent-child relationship is preferable at this stage of life (adolescence), as strained relationships between parents and children are not uncommon, during this stage (Thom, 1991). The data collected may, as a result, not be a realistic portrayal of the relationships present between learners and their parents.

The teacher-learner relationship was also found to influence the group membership of the learners. When this relationship is a positive one, the learners are less likely to belong to the group of learners from schools with a high pass rate. This is once again in contrast to what was found in the literature. The teacher plays a very important role in the academic achievement of learners, and it is possible that the teacher-learner relationship is, in this case, perceived as negative by learners, when it is characterised by discipline and control on the part of the teacher. On the other hand there could be the perception of a positive relationship when teachers are less strict with learners. The result of this could be that learners are more likely to excel academically when there is a good degree of discipline

present (negative perception of relationship), than when the learners are allowed to do as they please (positive perception of relationship).

The parental perception that the school climate was negative was found to have a negative influence on the pass rate of learners, in other words, when the parental perception is negative, the learner is less likely to belong to the group of learners from schools with a high pass rate. Thus a positive parental view of the school climate (and possibly then the presence of a more beneficial school climate) is likely to benefit the learner academically. In contrast to what was found, with respect to the learners' perceptions of the teacher-learner relationship in this study (an aspect which is encompassed by the concept of school climate), the parents' view of the situation may be more realistic. The learners may for example perceive strict teachers as negative, while their parents perceive this as positive and beneficial to their children's schooling, and it may be in these schools, where there is a greater degree of discipline, that learners excel academically.

5.5 RECOMMENDATIONS

During the course of this study the researcher encountered a number of difficulties, and these must be kept in mind if any future research is done in this respect. The most prominent difficulty encountered in this study was the relatively small sample size obtained. This was due to the lack of co-operation on the part of the learners and their parents, who failed to return the questionnaires that were distributed. This could have negatively influenced the outcome of the study, as the sample reliability is directly dependent on the sample size. Due to this lack effective representation of the population of black grade 12 learners, it is difficult to generalise the results obtained to the general population. In future this problem could be overcome if it can be arranged with the schools that the learners fill the questionnaires in at school, during a prearranged time. Unfortunately this was not possible during the present study, but it would enable the researcher to have a better degree of control over the questionnaires that are distributed. Another consideration, which makes generalising the results difficult, is the highly selective nature of the sample that was included in the study.

A possible recommendation for future research on this subject is that the academic results of the individual learners can be taken into account, instead of categorising the learners according to the pass rate of the school, which they attend. This could provide a more accurate representation of the influence of the factors measured, on academic achievement, as learners all perform differently, irrespective of the schools they hail from, or the achievements of that specific school.

In addition to this, the internal factors related to the learners and their parents, which were investigated in this study, can be examined in more detail. This can be done in order to determine whether or not the perceptions of parents and children differ in any way with respect to these all-important factors related to schooling. It is possible that this could provide a window on explaining the varying academic achievement of learners, who come from seemingly similar backgrounds.

It is also important to keep in mind the fact that the factors, which were investigated in this study, form only a part of the total number of factors that exert an influence on academic achievement. These remaining factors should also be examined in more detail to explore the degree of influence that they exert over the academic performance of learners.

SUMMARY

Academic achievement is an important and often troublesome aspect for many learners. The importance hereof can be seen in the fact that this achievement will affect the future of learners, as their opportunities for higher education and employment will depend on the results that they obtain in their final grade 12 examination. Achieving well academically is however not always a simple, straightforward task, as there are many factors present that can help or hinder learners in performing at their full potential. Cognitive factors can influence the level of academic achievement attained. Biographical factors have also been found to contribute to scholastic performance. These factors include aspects such as the gender, age and birth position of the learner, as well as parental age and marital status. Furthermore, social and emotional considerations (internal factors) also influence the learner's level of achievement. Aspects such as the interaction between learners and their parents, as well as between peers, and the relationships formed with teachers are included in this respect.

The final research sample used comprised 156 black learners and 147 parents from five secondary schools in the greater Bloemfontein area. The schools were selected on the basis of the grade 12 pass rates obtained over the past two years. The grade 12 learners in the respective schools formed the two groups based on pass rate, namely those with a high pass rate and those with a low pass rate. These groups were then compared with respect to the biographical and internal factors related to the learners and their parents. The data collected was then subjected to a logistic regression analysis, in order to determine which of the above-mentioned factors could significantly predict the group membership of a learner.

A number of factors were found to significantly contribute to the prediction of pass rate. Younger learners were found to be more likely to belong to the group of learners with a high pass rate, while learners who intended to study further, as well as those whose parents were married, were more likely to belong to the group of learners with low pass rates. In addition to these biographical factors, certain internal factors were also found to be significant. A poor degree of communication between learners and their parents, as well as negative interaction between teachers and learners, was found to positively influence the academic achievement of learners. Learners, whose parents had a negative perception of the school climate, were more likely to belong to the group of learners with a low pass rate.

OPSOMMING

Akademie se prestasie is 'n belangrike en soms problematiese aspek vir baie leerders. Die belangrikheid hiervan kan gesien word in die feit dat hierdie prestasie die toekoms van leerders kan affekteer, aangesien hulle kanse op hoër onderrig sowel as toekomstige indiensneming op die resultate van hulle finale graad 12 eksamen berus. Goeie akademiese prestasie is egter nie altyd so eenvoudig nie, aangesien daar baie faktore bestaan wat die leerder óf kan help óf verhinder om hul volle potensiaal te bereik. Kognitiewe faktore kan die vlak van akademiese prestasie beïnvloed. Dit is al gevind dat biografiese faktore ook tot skoolastiese prestasie bydra. Hierdie faktore sluit aspekte soos die geslag, ouderdom, en posisie in die geboorte-orde van die leerder in, sowel as die ouers se ouderdom en huwelikstaat. Sosiale en emosionele oorwegings (interne faktore) beïnvloed ook verder die leerder se vlak van prestasie. Aspekte soos die interaksie tussen leerders en hul ouers, sowel as tussen hulle eweknieë en ook die verhouding wat met onderwysers gevorm word, is hierby ingesluit.

Die finale steekproef wat gebruik was, het uit 156 swart leerders en 147 ouers van vyf sekondêre skole in die groter Bloemfontein-gebied bestaan. Die skole is op die basis van die graad 12 slaagsyfers oor die laaste 2 jaar geselekteer. Die graad 12 leerders in die skole is in twee groepe verdeel, gebaseer op hulle slaagsyfers, dit wil sê, diegene met 'n hoë slaagsyfer en die met 'n lae slaagsyfer. Hierdie groepe was ten opsigte van hulle biografiese en interne faktore vergelyk wat aan die leerders en hul ouers verwant was. Die data was aan logistiese regressie analise onderwerp ten einde vas te stel watter van bogenoemde faktore die groeplidmaatskap van die leerder beduidend kan voorspel.

'n Groot aantal faktore was gevind wat beduidend tot die voorspelling van slaagsyfers bygedra het. Jonger leerders was meer geneig om aan die groep leerders met 'n hoë slaagsyfer te behoort, terwyl leerders wat beplan om verder te studeer, sowel as dié wie se ouers getroud was, meer geneig was om tot die groep leerders met 'n lae slaagsyfer te behoort. Tesame met hierdie biografiese faktore, is sekere interne faktore ook gevind om beduidend te wees. Swak kommunikasie tussen leerders en hul ouers, sowel as 'n negatiewe verhouding tussen leerders en onderwysers, is gevind om tot positiewe akademiese prestasie te lei. Leerders wie se ouers 'n negatiewe persepsie van die skoolklimaat het, was geneig om meer tot die groep met 'n lae slaagsyfer te behoort.

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APPENDIX 1

BIOGRAPHICAL INFORMATION

Please complete the following questions. Where applicable draw a **circle** around the number next to your answer. Please only mark **one** answer at each question.

1. SURNAME: _____

2. FIRST NAME: _____

3. AGE:

- | | |
|-----------------------|---|
| 17 -19 yrs old | 1 |
| 20 - 22 yrs old | 2 |
| 23 - 25 yrs old | 3 |
| 26 - 28 yrs old | 4 |

4. GENDER:

- | | |
|--------------|---|
| Male | 1 |
| Female | 2 |

5. How many brothers and sisters do you have all together?

- | | |
|--------------------|---|
| None | 1 |
| One | 2 |
| Two | 3 |
| Three | 4 |
| Four | 5 |
| Five or more | 6 |

6. What is your position in the family?

- | | |
|----------------|---|
| Only | 1 |
| Oldest | 2 |
| Youngest | 3 |
| Other | 4 |

7. Are you physically healthy at this time?

- | | |
|-----------|---|
| Yes | 1 |
| No | 2 |

8. Do you intend to study further after school?

- | | |
|-----------|---|
| Yes | 1 |
| No | 2 |

9. What is your parent's marital status?

- | | |
|----------------------|---|
| Married | 1 |
| Divorced | 2 |
| Widowed | 3 |
| Single | 4 |
| Living together | 5 |

For office use
1-3

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10. What is your father's highest qualification?	<table border="1"> <tbody> <tr><td>Less than Gr10</td><td>1</td></tr> <tr><td>Grade 10</td><td>2</td></tr> <tr><td>Grade 11</td><td>3</td></tr> <tr><td>Grade 12</td><td>4</td></tr> <tr><td>College (nursing, teacher's etc)</td><td>5</td></tr> <tr><td>Technikon</td><td>6</td></tr> <tr><td>University</td><td>7</td></tr> </tbody> </table>	Less than Gr10	1	Grade 10	2	Grade 11	3	Grade 12	4	College (nursing, teacher's etc)	5	Technikon	6	University	7	11
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