TRANSITION TO SECONDARY SCHOOL: RELATIONSHIP BETWEEN CHANGES IN ACADEMIC ACHIEVEMENT AND GENERAL ADJUSTMENT.

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I declare that the dissertation hereby submitted by me for the Masters degree at the University of the Orange Free State is my own independent work and has not previously been submitted by me at another university/faculty. I furthermore cede copyright of the dissertation in favour of the University of the Orange Free State.

S.P. Walker

Dedicated to the memory of the late Eric Walker

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CHAPTER 1

INTRODUCTION

1.1   NECESSITY OF THE STUDY

The transition from primary to secondary school is a potentially stressful period in an individual's life. It signifies the end of childhood and the onset of career-oriented education (Schoeman, Schoeman & Esterhuyse, 1990). Some individuals seem to experience very little difficulty making this transition, while for others it can be a very traumatic event. The difficulties adolescents experience during this transitional period may be reflected in various facets of their functioning, specifically in the academic realm. Marais and Bornman (1989) claim that during this transitional period, many individuals are not able to maintain the same level of academic performance as they did during the primary school phase.

The transition from primary to secondary school coincides with the onset or early stages of adolescence. According to Hirsch and Rapkin (1987), enormous physiological, social, cognitive and psychological changes begin to take place during this stage of development. It is also during early adolescence that individuals become more self-aware and feel the need to start developing stable personal identities (Cummings, 1995). Adolescence is the period during which the old self-concepts of childhood are replaced with new and more adult self-concepts. As the majority of young adolescents' time is spent either at school or on school-related activities, academic achievement tends to have a strong influence on the development of these individuals' self-concepts. Wentzel and Asher (1995) found that academic achievement correlates with peer prestige and teacher ratings during adolescence. Adolescents who are academically proficient also tend to be popular amongst their peers and are considered to be intelligent and hardworking by their teachers (Taylor, 1989). The development of a positive self-concept and sense of academic mastery has a far-reaching effect on an interpersonal as well as intrapersonal level.

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It would seem that an inability to make an effective academic transition from primary to secondary school may impact on all areas of adolescents' lives to a greater or lesser extent. An inaccurate self-appraisal of individuals' abilities may result in academic disinterest and increased risk of drop out (Leeds, 1987). Adolescents often perceive the secondary phase of their education as a daunting and insurmountable obstacle. These perceptions, while based solely on their initial experiences of secondary school, may have negative ramifications that affect their academic careers.

1.2 GOAL OF THE STUDY

The literature reviewed would seem to suggest that there is a need to identify the principal factors involved in making an optimal academic transition from primary to secondary school. Academic achievement has been attributed to various factors. Some of the more prevalent factors include adjustment and study orientation. Wentzel and Asher (1995) as well as Chen, Rubin and Li (1997) found a correlation between social adjustment and academic achievement, while Crystal and his colleagues (1994) found a correlation between psychological or intrapersonal maladjustment and poor academic performance. Schoeman, Schoeman and Esterhuyse (1990) found that pupils with effective study methods and positive study attitudes tend to perform better academically and experienced a better level of adjustment than their peers.

The goal of this study is to determine how adolescents who experience an increase in their academic achievement during the transition from primary to secondary school differ from those adolescents who experience a decrease in academic achievement during the same period. Specific attention will be given to differences in their general adjustment, including their study habits and attitudes.

The literature study was done with respect to the factors already mentioned in sections1.1 and 1.2. This information will be discussed according to a framework that may be illustrated as follows:

Fig 1.1: Schematic representation of the structure of the literature study

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┌─────────────────────────────────────────────────────┐
│                     STRESSORS                        │
│   ◆ Adolescent Development                           │
│   ◆ Transition from primary to secondary school      │
└─────────────────────────────────────────────────────┘

┌──────────┐  ┌────────────┐  ┌────────────┐  ┌─────────────┐
│  GENDER  │  │  LANGUAGE  │  │  DOMESTIC  │  │ RESIDENTIAL │
│          │  │            │  │ INFLUENCES │  │   STATUS    │
└──────────┘  └────────────┘  └────────────┘  └─────────────┘

┌─────────────────────────────────────────────────────┐
│              ADJUSTMENT MECHANISMS                   │
└─────────────────────────────────────────────────────┘

┌─────────────────────────────────────────────────────┐
│              ACADEMIC ACHIEVEMENT                    │
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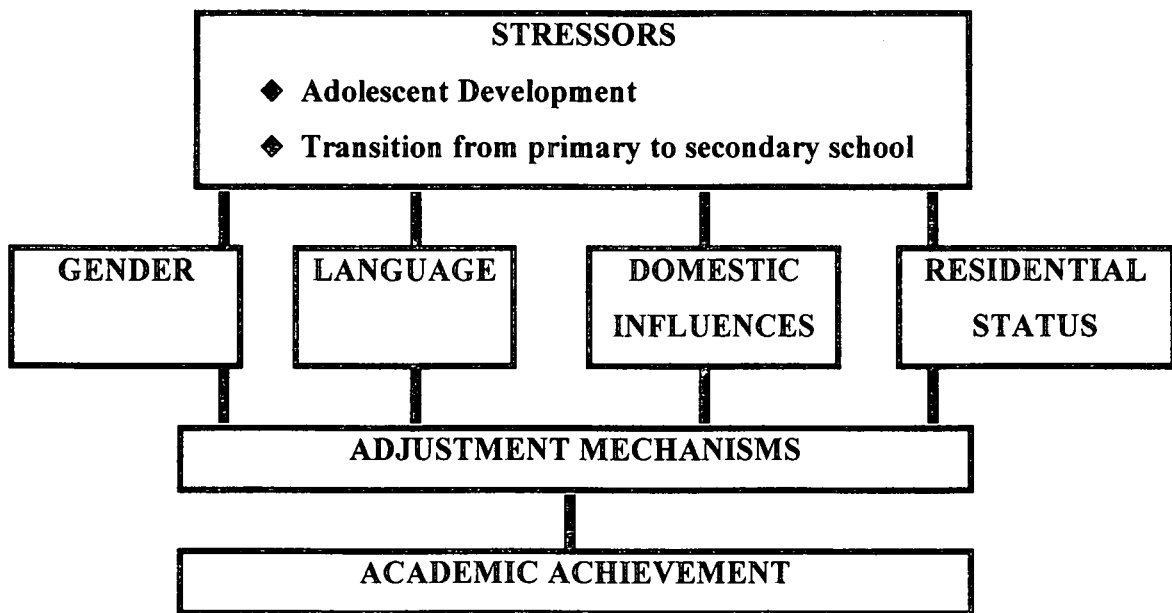
Early adolescence is a period during which individuals experience change and development on various fronts. This study will focus specifically on the effects of adolescent development and the transition from primary to secondary school on individuals. Although these changes seem to be universal, a variety of factors influence individual experiences during this period. The way in which differences with regard to gender, language, domestic influences and residential status influence individuals' experiences of adolescence, as well as the transition to secondary school will also be highlighted. A brief overview of each chapter follows:

1.3.1   CHAPTER 2: ADOLESCENT DEVELOPMENT

The goal of this chapter is to give the reader a general overview of the physical, cognitive, social and emotional development that takes place during puberty and early adolescence. It will also attempt to highlight the way in which these various

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areas of development influence each other. The implications of pubertal development for the individual will also be dealt with.

1.3.2 CHAPTER 3: ACADEMIC ACHIEVEMENT

The term academic achievement will be defined and operationalised. The reciprocal relationship between personal, domestic and educational factors and academic achievement will be investigated. The effect that the education system and the transition from primary to secondary school have on academic achievement will also be highlighted. Specific attention will be given to the difference between the academic skills emphasised at primary and secondary school level. The crisis that this may create for the new secondary school learners, as well as the way in which they attempt to cope with these challenges will also be addressed. Finally, the importance of effective study skills and attitudes as mechanisms of general adjustment will be discussed.

1.3.3 CHAPTER 4: RESEARCH PROCEDURES

The research design, measuring instruments, sample composition and statistical methods used in the study will be discussed in this chapter.

1.3.5 CHAPTER 5: RESEARCH RESULTS AND DISCUSSION

The data will be reported in this chapter and the implications of the findings will also be discussed. Various recommendations with regard to future research will also be made.

CHAPTER 2
ADOLESCENT DEVELOPMENT

2.1 DEFINITION OF ADOLESCENCE

This chapter will focus on the various developmental changes the individual experiences during early adolescence. Adolescent development in general will be dealt with, but specific attention will be paid to early adolescence, as this is the period that coincides with school transition. The transition from primary to secondary school and the adjustment mechanisms used by adolescents will be discussed at a later stage. However, it is vital that these events be seen in the context of a very significant and demanding stage of human development.

In order to effectively investigate adolescent development, a functional definition of adolescence needs to be formulated so as to provide a focus for the discussion. According to Cummings (1995), this is a near impossible task due to the complexity of both the term adolescence and the developmental stage itself. Adams, Gullotta and Markstrom-Adams (1994) go further with their contention that almost every theorist and researcher in the field of adolescence has their own definition of what adolescence is.

In spite of these difficulties, the formulation of a definition needs to be attempted. Toward this end some existing views on adolescence will be reviewed. Seltzer (1989) views adolescence as consisting of four complete domains of change namely: physical, cognitive, emotional or psychological and social. Thom (1991) defines adolescence as a period during which certain developmental tasks need to be accomplished. This is in contrast to the stereotypical idea that adolescence is a disorganised period of emotional storm and strife. Thom feels that this view has been over-emphasised and as a result the task-orientated nature of adolescence overlooked. Steinberg (1993) agrees that adolescence is primarily a time of task completion on the way to adulthood. Manaster (1989) divides the tasks of adolescence into two broad categories: to make the transition to adulthood and to be a success as a teenager.

Some of the earliest attempts to define adolescence used age or physical development as criteria. Such simplistic definitions are problematic. Although adolescence is a universal phenomenon, the ages of onset and completion vary not only from culture to culture, but from one individual to the next within the same culture (Steinberg, 1993; Thom, 1991). The notion of defining adolescence according to observable (physical) development is also not acceptable. It is generally accepted that adolescence begins with the onset of puberty (Craig, 1996; Seltzer, 1989; Steinberg, 1993). However, Steinberg states that the end of adolescence is more a matter of opinion than objective, measurable fact. Cummings (1995) contends that physical maturity does not qualify as the sole criterion for determining the end of adolescence and the beginning of adulthood. Physical development often does not coincide with the same measure of emotional or psychological maturity. She goes on to say that the economic demands of modern society cause young people to be dependent on their parents for longer periods of time. Consequently, a physically and perhaps emotionally mature person may not yet be able to fulfil the economic roles of adulthood. It is thus evident that while age and physical development may form part of the criteria for determining the end of adolescence, they are not the sole criteria.

Having pointed out the difficulties associated with arriving at a comprehensive definition of adolescence, it is necessary to focus on some areas of consensus. All the sources reviewed seemed to agree with the concept of adolescence as a period of transition. Although different theorists emphasise different developmental tasks during adolescence they all seem to centre around preparing physically, academically (cognitively) and socially for adulthood (Seltzer, 1989). Consensus also seems to exist as to the magnitude of the changes that adolescents undergo. Seltzer views adolescence as a time of complex and monumental change, while Craig (1996) likens the developmental intensity of adolescence to that of the first two years of life. As mentioned earlier, it is generally accepted that the onset of puberty signals the beginning of adolescence. While the most acceptable criterion for determining the end of adolescence is the individual's ability to assume the adult roles determined by the cultural and legal standards of his/her society (Thom, 1991). Adolescence is thus a period during which individuals learn, by way of experimentation, to eventually fulfil and cope in their adult roles. This idea is based on Zimiring's (1982) notion of adolescence being the "learner's permit" stage of

development. Adolescents are free to experiment and make mistakes within a fairly safe and consequence-free environment. Thus by attaining skills and accomplishing tasks the adolescent progresses towards adulthood.

Adams and his colleagues (1994) suggest three criteria by which adolescent development may be measured:

1. **Physiological criteria:** Adolescents develop primary and secondary sexual characteristics during puberty.

2. **Cognitive criteria:** Adolescents' thought processes move from the observable and concrete to more abstract thought and finally to meta-cognition. Thus they develop the ability to reflect upon their own thought processes.

3. **Social criteria:** Adolescents need to develop the skills to cope effectively in their particular society and to be accepted as adults in that society by meeting a set standard.

Having reviewed various sources, the following conclusion may be reached: Adolescence is a developmental stage between childhood and adulthood, beginning with the onset of puberty and ending once individuals are able to meet the cultural and legal standards of adulthood set by their particular society or social grouping. This progression towards adulthood takes place through the successful completion of various developmental tasks in the realms of physiology, cognition and social interaction.

2.2 PHYSIOLOGICAL DEVELOPMENT

According to the definition given previously, the physiological changes of puberty mark the beginning of adolescence. The entire process of adolescent development is, to an extent, triggered by puberty. Changes in individuals' physical appearances cause people to view them differently. Consequently, people tend to react differently towards these adolescents. This in turn affects adolescents' self-images as well as their patterns of social interaction (Steinberg, 1993). Social development thus occurs in reaction to changes in adolescents' intra- and interpersonal worlds. The physical development of adolescence thus directly and indirectly promotes the organisation of various psychological states (Adams et al., 1994).

This period of physiological change coincides with certain inter alia cognitive changes. Puberty generally begins between the ages of 11 and 13 (Thom, 1991). It is also at about this time that the individual's cognitive functioning begins to change as well (Manaster, 1989). Adolescents begin to develop a more abstract way of thinking and tend to move further away from purely concrete thought as they get older. Cummings (1995) claims that the physiological changes that occur during puberty have a direct effect on cognition and information processing. According to her, the changes in nerve structures and neuro-chemistry that occur during puberty enable adolescents to develop more adultlike cognitive processes. This maturation in information processing is accompanied by greater academic demands (Luthar, 1995). The more demanding secondary school environment also affects the way in which adolescents perceive their capabilities and self-worth.

It is thus evident why the physiological changes of early adolescence need to be understood. It would appear that not only the physical realm, but also cognitive, academic, social and emotional changes are triggered either directly or indirectly by puberty. No investigation into, or discussion of, adolescence would be complete without at least some reference to these physiological changes. None the less, the focus of this study is primarily psychological. As a result, an in-depth physiological exposition of puberty would be well beyond its scope. Consequently, only the major physiological

characteristics of puberty and basic developmental processes that occur during puberty, as well as the psychological impact of these changes, will be discussed.

2.2.1. Puberty

Steinberg (1993) defines puberty as "the collective term used to refer to all the physical changes that occur in the individual as they pass from childhood into adulthood" (p. 24), while Craig (1996), simply views puberty as the attainment of sexual maturity. It could thus be deduced that the term puberty describes all the physiological changes that the individual undergoes in order to reach sexual or, more accurately stated, reproductive maturity.

Puberty is defined by certain criteria. While the onset of puberty is determined by each individual's body chemistry, and thus varies from one person to the next, it is generally accepted that it begins between 11 and 13 years of age. Aside from individual variations, females tend to reach puberty between 10 and 14 months before their masculine counterparts (Craig, 1996; Thom, 1991). It is interesting to note that the average age at which puberty begins has been steadily declining over the past few decades (Adams et al., 1994). The end of puberty, according to Craig, is signified by the physiological ability to sexually reproduce. It is obvious that this is not an insignificant achievement. Craig draws attention to the fact that only the foetal period and the first two years of life rank above puberty in terms of pure developmental intensity. This is testament to the magnitude of the change young adolescents experience.

This stage of intense development is characterised by specific features. Perhaps the most obvious of these is the adolescent growth spurt. Adolescents experience an extremely rapid increase in height and weight (Steinberg, 1993). Parents often say that their child has "shot up overnight", so rapid does this growth appear. The growth spurt will be dealt with in more detail in the section on the physical changes that occur during puberty. In addition to this rapid height and weight increase, young adolescents also develop sexually. This is commonly divided into the development of primary and secondary sexual characteristics (Cummings, 1995). Primary sexual characteristics refer to the physiological mechanisms

involved in reproduction (Adams et al., 1994), while secondary sexual characteristics refer to many of the observable physical differences between the sexes (Craig, 1996). These would include developing pubic hair as well as breast development in females and the development of facial hair in males. These physical changes will now be discussed in more detail.

2.2.1.1 Physical changes occurring during puberty

Various very obvious changes occur in the body during puberty. As mentioned earlier, young adolescents experience rapid weight gains and increases in height. Physical development however, is not only restricted to height and weight. They also begin to develop gender specific characteristics during the early stages of puberty.

The adolescent growth spurt usually begins with an increase in the length of individuals' limbs. Adolescents' arms and legs lengthen disproportionately to the rest of their bodies (Craig, 1996). They often appear gangly or awkward as a result. These skeletal changes are followed by changes in body weight and composition. An increase in body fat occurs in late childhood (Adams et al., 1994). During adolescence, however, the body begins to develop more muscle mass (Cummings, 1995). A greater degree of physiological definition is also evident as adolescents begin to take on a more adultlike appearance (Craig 1996; Cummings, 1995; Thom, 1991). As a result the older the adolescents get the more they seem to "fit together".

Various physical changes to the body structure occur during puberty. These changes signal to adolescents and to others that they are maturing. This period of rapid development and change profoundly alters the way adolescents view themselves and how they are perceived by those around them (Steinberg, 1993). For some adolescents this is a time of enhanced status and new found challenges, while for others it is an extremely anxious and disruptive period (Seltzer, 1989).

2.2.1.2 The psychological impact of puberty

It has already been established that puberty has far reaching implications for all areas of adolescents' lives. These may be positive or negative. The fact remains that one's physical development or lack thereof greatly affects the way one sees oneself as well as the way people view you and consequently how they react to you (Craig, 1996). This has serious implications for individuals whose development deviates from that of their peer group. In a study carried out on American adolescents, Graber (1997) and his colleagues found that the timing of individual development during puberty was the chief determinant of how puberty was experienced psychologically. Adolescents who developed earlier or later than their peers struggled more to adjust to puberty and were more likely to develop some forms of psychopathology. The timing of one's development has a profound effect on one's psychological wellbeing that may reach far beyond adolescence. The specific social and emotional difficulties associated with developmental timing will be dealt with in more detail during the discussion on adolescent psychosocial development. However, development during adolescence is not only restricted to the physiological realm. Development also occurs on the cognitive front.

2.3   COGNITIVE DEVELOPMENT

Another area affected by the transition to adolescence is cognitive functioning. During puberty the adolescents begin to think and reason differently from the way they did as children. Adolescence is thus also a period of cognitive transition. Adolescents begin to move from the concrete thought of childhood to the abstract thought of adulthood (Craig, 1996). Cognitive changes, like all the other transitions that occur during adolescence, have a profound effect on all areas of individual functioning.

This discussion on cognitive development will extend beyond the realm of early adolescence and puberty. There are two reasons for this. First, not all people develop at the same pace and as a result some adolescents may be cognitively advanced before the end of puberty. Second, the gradual nature of cognitive development makes it difficult to

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allocate specific developmental features to a corresponding age (Sternberg, 1988). With this in mind, the following facets of cognitive development will be investigated: the features of adolescent cognition, theories of cognitive development and the implications of cognitive development.

2.3.1 Features of adolescent cognition

According to Steinberg (1993), adolescents have the ability to think in a more advanced fashion than children do. Adolescent thought is characterised by three specific features (Craig, 1996; Cummings, 1995; Steinberg, 1993):

- The ability to think in terms of hypothesis and possibility.
- An increase in abstract thought.
- Meta-cognition or the ability to monitor and control one's own thought processes.

Adolescents are able to think in terms of possibilities. While children can hypothesise to an extent, the ability to make fairly accurate projections of future events seems to develop during late childhood and early adolescence (Pressely & Ghatala, 1989). It could be said that children focus chiefly on what is, while the adolescents tend to focus on what could be. This does not mean that adolescents are no longer able to reason in a concrete fashion. It does, however, become easier for adolescents to move between specific or concrete reasoning and abstract reasoning (Steinberg, 1993). Where young children live in a world of linear cause and effect, adolescents have the ability to systematically generate alternative possibilities and explanations. They thus develop the ability to generate explanations or hypotheses as well as the ability to evaluate these hypotheses against their existing knowledge or other available information. This increased predictive ability was demonstrated in a study performed by Pressely and Ghatala (1989). Learners from various grades were asked to predict their performance on a school test based on their perceptions of the degree of difficulty of the test. Learners in the seventh and eighth grade (puberty/early adolescence) were correct in their predictions far more often than children in the lower grades were.

The second feature of adolescent cognition is the ability to think abstractly. This means that adolescents are able to think at a level of complexity that exceeds the causal, linear and observable. As Steinberg (1993) puts it, they are able to deal with things that they are not able to sense directly. The ability to think and reason abstractly has various implications for adolescents. Abstract cognition enables them to think in multiple dimensions (Craig, 1996). This means that adolescents tend to take a more complex view of the world than they did when they were younger. As stated previously, adolescents are able to see how various factors could influence a situation and do not take a linear view of life. This is due to the ability to think abstractly. They are also able to see the complex characteristics and interactions that make up the human personality. This enables adolescents to predict the reactions and behaviour of others to a certain extent. Consequently, they develop a degree of social sophistication (Steinberg, 1993). This, in turn, enables them to develop the interpersonal skills required to successfully fulfil many of their adult roles in society. Abstract thought thus has value in interpersonal interaction and helps develop a type of socially sensitive thinking or social cognition.

The third characteristic of adolescent cognition is meta-cognition. Steinberg (1993) defines meta-cognition as "the ability to monitor one's own cognitive activity during the process of thinking" (p.62). Simply put, it is the ability to think about thinking. Adolescents are better able to verbalise their thought processes because of the ability to realise how they are thinking. Meta-cognition has, arguably, the largest influence on the day to day functioning of adolescents. Craig (1996) attributes the increased introspection, self-consciousness and intellectualisation often characteristic of adolescence to their newfound ability to think about thinking. This is perhaps most evident in two well-known features of adolescence. The first is the imaginary audience where adolescents are firmly convinced that people are watching everything they do. This results in the increased self-consciousness that adolescents experience (Adams et al., 1994). The fact that this coincides with the physical changes of puberty often causes great distress to adolescents about their appearance. The second feature of adolescent thought attributed to meta-cognition is the personal fable. The

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increased introspection adolescents engage in leave them with the belief that their experiences are unique. This often results in the "no one understands me" attitude of many adolescents. It is evident that cognitive development adds to the impact of early adolescence upon, often unsuspecting and ill-prepared, pubertal individuals. Various attempts have been made to explain not only how adolescent cognition differs from childhood cognition, but also the mechanisms by which it comes to exist.

2.3.2 Theories of adolescent cognitive development

The theoretical approaches to the study of cognitive development can be divided into three schools:

- The Piagetian model.
- The Psychometric model.
- The information-processing model.

A fourth approach, the integrated approach, has emerged over the past few years (Steinberg, 1993). Each of these models will now be dealt with in a little more detail.

2.3.2.1 The Piagetian model

This view of cognitive development is based on the theories of Jean Piaget (1972). The main premise is that cognitive development parallels individual maturation. According to Piaget, biological maturation and increasingly complex environments cause a state of cognitive disequilibrium. This means that the existing cognitive frameworks become ineffective in a new developmental stage. Cognitive development is thus an attempt to restore balance. Piaget divided cognitive development into four progressive and distinct stages; namely the sensorimotor stage, the pre-operational stage, the concrete operational stage and the formal operational stage. Ivey (1993) who works extensively within the Piagetian framework added a fifth stage, the dialectic stage. A composite of these stages is depicted in fig 2.1.

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Fig. 2.1:   Stages of cognitive development based on the Piagetian model (1972)

DEVELOPMENTAL STAGE	COGNITIVE STAGE	FEATURES
Infancy	Sensorimotor	* React by way of movement (motor) to sensory stimuli. * Disorganised and random.
Early childhood	Preoperational	* Use of symbols to represent physical phenomena and emotions. * Use of language.
Middle / Late childhood	Concrete operational	* Focus on the concrete and observable. * Cause and effect/linear thought. * Develop "practical" logic.
Adolescence / Early adulthood	Formal operational	* Think in terms of possibilities / hypotheses. * Abstract reasoning. * Meta-cognition. * Deductive reasoning. * Inductive reasoning.
Early / Late adulthood	Dialectic / Systematic	* See the big picture. * Able to integrate sub-systems into a system. * Highly abstract reflective thought. * Complex multiperspective thought.

While much agreement exists between the work of Piaget (1972) and Ivey (1993) there are some contentious areas. Where Piaget viewed cognitive development as a progressive sequential process, Ivey has a less structured view. He believes that people tend to move between the stages of cognitive development. Ivey thus views cognitive development not as a sequential, but a flexible process, which allows vertical as well as horizontal movement.

The transition adolescents make to the formal operational stage helps them to adjust to a new environment biologically, socially and academically. The process of prepositional logic begins to develop in addition to the ability to reason logically (Steinberg, 1993). This enables adolescents to reason using hypotheses and theory as well as concrete, observable phenomena. The ability to reason abstractly thus begins to develop. This does not occur instantly. Adolescence is a time of trial and error where, according to Steinberg, prepositional logic appears

to come and go. It is only in late adolescence that most people are able to develop a consistent pattern of formal thought. It must be stated, however, that many people never progress past the stage of concrete operations (Ivey, 1993; Steinberg, 1993).

Formal operational thought thus develops because changes, both external and internal, force individuals to enhance their cognitive frameworks in order to be able to function optimally. As adolescents' environments make greater demands on their abilities to reason using hypothesis and possibility (e.g. taking subjects like mathematics and science) they consolidate these abilities. As a result, formal operations become the dominant mode of cognitive functioning.

There has been criticism of this model (Steinberg, 1993). Some theorists find it difficult to accept that cognitive development takes place in a strictly sequential nature, as proposed by Piaget. This is not in keeping with the more gradual and flexible nature of the other changes that occur during puberty. According to Steinberg, modern theorists tend to view change as a gradual and progressive process. In spite of this, the Piagetian model is still one of the most widely accepted explanations of cognitive development.

Where Piagetian theorists attempt to focus qualitatively on common features in the cognitive functioning of different individuals during the same developmental period, the psychometric approach focuses on the quantitative study of differences in cognitive functioning (Sternberg, 1988).

2.3.2.2 The psychometric model

As the name suggests, this view is based on the quantitative measure of intelligence or intellectual potential. Sternberg (1988) refers to the triarchic theory of intelligence. This means that intelligence consists of three facets or components:

- ☐ **Componential intelligence** which refers to the ability to acquire, store and process information.

- ☐ **Experiential intelligence** referring to the individual's ability to use creativity and insight to solve problems.

- ☐ **Contextual intelligence** which is the individual's ability to think practically.

It is believed that all people possess all three types of intelligence. However, one type tends to dominate in a specific person. The focus of the psychometric model is measuring the differences in general intelligence as well as in the sub-types between individuals and within the same individual.

Various intelligence measures are used to determine changes in intelligence across the lifespan. Psychometric theorists are particularly interested in determining how stable intelligence is during adolescence and which mental abilities improve during adolescence. It was found that intelligence remained constant during adolescence when intelligence test scores were compared to the norm group. However, increases seem to occur in the absolute test scores as the individuals get older (Sternberg, 1988). Very simply put, adolescents are cleverer than children are. While all three types of intelligence show improvement during adolescence, experiential intelligence (abstract thought) tends to show slightly more improvement in most cases.

The psychometric approach, like the Piagetian approach, has been criticised. The emphasis placed on the quantitative measure of intelligence is viewed negatively (Goleman, 1995). It is common knowledge that intelligence tests are notoriously culturally biased, and thus not a reliable measure of all people's potential (Jones

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et al., 1995). A second criticism is that no explanation is offered for the changes that are said to occur. The one positive aspect, however, is that this approach basically has a fairly solid empirical basis. However, this approach provides little insight into the differing dynamics of childhood and adult thought. According to Steinberg (1993), the information-processing model arose due to a need to determine the exact differences between the thought of childhood and more adult thought.

2.3.2.3 The information processing model

Here human reasoning or cognition is likened to a computer system. Consequently, the thought process can be broken down into a series of sub-programmes. The thought process may, for argument sake, be divided into: paying attention to stimuli, encoding the stimuli, comparing it to existing information, storing the information and retrieving the information. These sub-programmes need not always follow a specific sequence. Steinberg suggests that the sequence in which these sub-programmes are used greatly influence the outcome of the information processing. This would imply that different tasks would require individuals to use their cognitive processes in different sequences in order to solve problems effectively.

It is hypothesised that improvement takes place in a few specific areas of information processing during adolescence. As a result, adolescents tend to be better than children at abstract, multidimensional and hypothetical thought (Steinberg, 1993).

The first change occurs with regard to their ability to concentrate and pay attention. Adolescents are better able to stay focused than children are (Craig, 1996). This is evident in their ability to pay attention. Adolescents are also able to focus on one stimulus in spite of distractions and other stimuli in the environment. Thus an improvement in the individual's selective attention occurs. Divided attention also improves (Steinberg, 1993). This means that adolescents are able to concentrate on more than one thing at a time, something a child would find very difficult to do.

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Secondly, memory seems to improve during adolescence. Improved problem-solving abilities are evidence of an increased capacity for short-term memory and comparison, while the ability to commit more facts effectively to memory is evidence of a better long-term memory. Both these developments help adolescents cope with the increased workload of secondary education (Adams et al., 1994; Steinberg, 1993).

The third development concerns the organisational strategies used by adolescents. As adolescents mature, they are better able to select the correct problem-solving strategy/system for a specific problem. They may not always able solve the problem correctly, but they are far better at organising and selecting problem-solving processes than children are (Steinberg, 1993).

The final area of improvement is in meta-cognition (Adams et al., 1994). The greater self-awareness and self-consciousness of early adolescence is testament to a huge leap in the ability to monitor and regulate one's own thoughts.

Case (1985) and other researchers have attempted to integrate the notion of an information-processing model with more developmental theories of cognitive change during adolescence.

2.3.2.4 The integrated approach

Case (1985) states that the gains in concentration, memory, organisation and meta-cognition that occur during adolescence allow individuals to think in a more automatic fashion. Adolescents are now able to approach problems in a more sophisticated way due to this cognitive automatisation. Less time and effort is spent on the basic cognitive process. This in turn frees up more "cognitive energy" for more complex and sophisticated problem-solving. This could explain why adolescents are more effective at solving multifaceted problems than children are (Craig, 1996). It would thus seem that developments in adolescent cognitive structures allow adolescents to employ more sophisticated information processing techniques. Consequently, adolescents find that they are able to solve more complex problems than when they were children. It is evident that

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adolescents undergo drastic cognitive development. Changes of these proportions will obviously have an impact on their functioning. It is thus necessary to consider the impact this development has on the lives of most adolescents.

2.3.4 The impact of cognitive development

It is evident from the preceding discussion that changes in cognition occur as children progress through puberty and into adolescence. While theorists may disagree about how these changes take place, the effect they have on individuals cannot be disputed.

Adolescents are able to think in terms of hypotheses and possibilities (Ivey, 1993). This in turn enables them to solve more complex and abstract problems (Steinberg, 1993). These abilities are matched by the educational system. The introduction of complex scientific and mathematical subject matter into the curriculum presupposes improved cognitive functioning on the part of the learners. Adolescents who are slow to develop cognitively are thus likely to struggle in these subjects and fall behind in the work. In this way the idea that chronological age equals cognitive development often results in both academic and adjustment problems for adolescents (Chen et al., 1997).

Hypothetical reasoning enables adolescents to put themselves in other people's shoes (Craig, 1996). Adolescents are also better able to predict people's behaviour based on past knowledge of them. This is vital for the development of effective social skills. Consequently, adolescents who are slow to develop cognitively, may experience inter-personal difficulties with peers as well as older people.

Finally, meta-cognition leads to increased self-consciousness during early adolescence. The danger here is that the combination of biological change and overly active meta-cognitive processes could lead to self-esteem and body image related problems e.g. eating disorders (Graber et al., 1997). So, while the cognitive developments that take place around the time of puberty are important for adolescents' preparation for adulthood, they also hold many dangers and

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difficulties. However, the increased cognitive abilities that develop during adolescence enable individuals to view themselves and others in a new light. Adolescents become more aware of their social functioning and the way in which others perceive them. This, in turn, enables psychosocial development to take place.

2.4   PSYCHOSOCIAL DEVELOPMENT

The term psychosocial refers to inter- and intrapersonal worlds of the adolescent. The way in which they are affected by the self and others, as well as the way in which they interact with the self and others. To focus solely on the social environment of the adolescent would deny the critical role of internal emotional processes. Conversely, a purely interpersonal approach would fail to highlight the extent to which individuals are influenced by their social environments. It could therefore, be said that adolescence is a time for discovering who you are. Adolescents need to discover who they are in relation to others as well as who they, as individuals, are. Steinberg (1993) views adolescence as the time during which people decide on their roles in society - their identity - and their ability to fulfil these roles - self esteem.

At the outset of this discussion on adolescent development, it was stated that adolescence involves the process of becoming an adult (Craig, 1996). Consequently, individuals' psychosocial development must be directed at preparing them to fulfil their adult roles. In order to do this they must achieve a level of social acceptance as adults. Modern western, capitalist society requires an adult to be autonomous, to have a defined identity, to have chosen a sexual orientation and have the ability to pursue intimate relationships within this sexual orientation, and finally to achieve a degree of success in a selected occupation or profession (Fraser & Tucker, 1997; Steinberg, 1993).

2.4.1 Identity development

One of the chief tasks of adolescence is deciding who and what you are. Erikson (1968) claims that most of an adolescent's energy is focused on self-definition. However, before a discussion on the development of identity can be undertaken it is necessary to define the concept of identity development.

Steinberg (1993) provides the following definition:

> "Identity development is a complex and multifaceted. Actually, it is better understood as a series of interrelated developments- rather than one single development- that all involve changes in the way individuals view themselves in relation to others and in relation to the broader society in which they live." (p.256).

The development of identity is not restricted to adolescence, but is a lifelong process. Adolescence is, however, the period during which individuals experiment with various roles, old and new, and begin to consolidate the basic identity they will take into adulthood. The physical changes of puberty and the cognitive development of adolescence confront adolescents with various options. Adolescents need to make policy decisions on sexuality, morality, career and self-worth (Adams et al., 1994). The adult world also begins to expect more from individuals during adolescence. Adolescents are expected to choose school subjects, career directions and achieve a degree of independence. This pressure forces adolescents to choose a way of life. These decisions, often taken too casually, help determine an individual's identity. Thus while identity exists before adolescence, it is reshuffled, restructured and consolidated during this period (Rosenberg, 1985). Various views exist as to how identity develops. This discussion will be restricted to three points of view: Erikson's (1968) psychosocial development, James Marcia's (1980) four statuses of identity and Blasi and Milton's (1991) four levels of identity.

2.4.1.1 Erikson's (1968) theory of psychosocial development

This is the most popular and widely accepted theory of psychosocial development. However, in order to gain insight into the mechanisms by which psychosocial development takes place, it is necessary to view Erikson's (1968) theory in totality. According to Erikson, changes/factors in the individual's physical, social and biological environment cause specific developmental crises to develop at certain stages of maturation. Each crisis, depending on the individual's unique experiences, will be resolved in a positive or a negative way. Each developmental stage presents a continuum of options between a functional and dysfunctional pole. The closer the individual's resolutions of the crisis are to the more functional pole the better. The developmental stages preceding and including adolescence are illustrated in Figure 2.2.

Fig. 2.2: Schematic representation of Erikson's (1968) stages of psychosocial development preceding and including adolescence

Age	Developmental Crisis	Functional pole	Dysfunctional pole
Birth - 1 year	Developing trust in one's surroundings.	Trust / security.	Distrust / insecurity.
2 – 3 years	Developing the ability to regulate one's own behaviour.	Autonomy.	Doubt.
4 – 5 years	Exploration of physical, intellectual and social limits.	Initiative.	Guilt.
6 – 11 years	Mastering skills necessary for obtaining an education.	Industry / competence.	Inferiority / incompetence.
12 – 18 years	Developing sense of self and identity.	Firm sense of identity.	Role confusion / lack of identity.

Erikson (1968) is of the opinion that the individual needs to successfully resolve

each crisis in order to be able to successfully deal with the next. If this is not done the individual will experience difficulty and may (often through psychotherapy) have to revisit these previous stages of development in order to successfully resolve their crises. All the previous stages of development thus play a role in determining the identity the adolescent develops by influencing the manner in which the identity crisis is resolved.

Erikson (1968) views identity formation as a dynamic process during which adolescents test various roles and self-images before selecting those they identify with and then integrating them to form a sense of identity. Adolescents experience this process as a crisis. A variety of new influences enter their lives: peer acceptance, sexuality and career orientation to name but a few. They must resolve this crisis in order to establish a firm identity. Erikson states that failure to resolve this crisis effectively may lead to a state of role confusion. Role confusion occurs when individuals are not able to decide on a fixed identity and fixed roles. As a result they feel socially isolated and constantly fluctuate between various roles. Some adolescents may choose to reduce the discomfort of the crisis by developing what Erikson refers to as a negative identity. These adolescents escape the crisis by remaining in their social roles of childhood. However, this soon leads to frustration and they engage in reckless, impulsive and delinquent behaviours. Erikson's approach formed the basis for the majority of theories on identity development. Marcia's (1980) four statuses of identity provide a slightly more contemporary view on the issue of identity development within the broad Eriksonian framework.

2.4.1.2 James Marcia's (1980) four statuses of identity

According to Marcia (1980), adolescents find themselves in one of four identity states: identity diffusion, identity foreclosure, moratorium or identity achievement. Identity state membership is dependant on how much exploration the adolescents have done, concerning their various alternatives and the degree of commitment experienced by the individuals. He views commitment as the level of emotional energy adolescents invest in a specific area of life. The three most important areas being: occupational choice, religious ideology and political

values. The identity statuses of individuals are thus dependent upon their degree of exploration and level of commitment as illustrated in Figure 2.3.

Fig. 2.3:   Marcia's (1980) four statuses of identity

Commitment	Lack of Commitment	
Identity Achievement	Moratorium	**Exploration**
Identity Foreclosure	Identity Diffusion	**Lack of Exploration**

Identity can thus be seen as dependent upon the extent to which individuals have explored various options/roles and to which extent a firm commitment has been made in the areas of: occupational choice, religious ideology and political values. It is obvious that adolescents may pass through various stages before reaching an identity status. However, certain identity statuses are more functional than others. To this end the four statuses will be dealt with in more detail.

(A) Identity diffusion

Identity diffusion is the result of insufficient exploration and insufficient commitment. These individuals have given very little thought to identity issues and/or have failed to make any type of future-oriented commitment (Adams et al., 1994). This lack of fixed identity makes adolescents prone to rapidly changing beliefs and values. They also tend to be very easily influenced by other people. These individuals find it difficult to focus and find direction in life. Consequently, they tend to live for the present. Much emphasis is placed on immediate experiences, they over-identify with their peer group in an attempt to establish some type of identity and are partial to following fads and fashions. These adolescents often withdraw as a result of strong feelings of alienation and ambivalence.

(B) Identity foreclosure

Identity foreclosure is characterised by a strong commitment and a lack of sufficient exploration. These adolescents may be just as impulsive and unsettled as those with a diffuse identity status. They tend to suppress these aspects of themselves. They have a strong goal orientation and endorse strong rigid authoritarian value systems. As a result they tend to be rule and regulation oriented. This need for rules and structure tends to make them rather dependent people (Adams et al., 1994). Individuals with identity foreclosure statuses are not likely to be terribly active in peer groups and often lack the social skills required for effective interpersonal relationships. Marcia (1980) is of the opinion that these individuals have constricted personalities and that they are out of touch with their emotions and, as a result, have difficulty expressing emotion. These adolescents have strongly committed themselves to goals and ideologies without adequate investigation of the alternatives.

(C) Moratorium

Adolescents with this status actively explore a variety of options, but are unable to make a firm commitment to any of them. This lack of well-defined goals tends to make these adolescents very anxious. Their lack of commitment leads to a low level of motivation. The result is often an inability to complete tasks they have started. They constantly seek more information and new experiences. According to Marcia (1980), adolescents with a moratorium status generally seem social and active. They are more comfortable with themselves than diffuse adolescents are. However, the high premium they place on the opinions of other people tends to make them self-conscious.

(D) Identity achievement

Adolescents with an identity achievement status have made a firm commitment to a set of values after a period of exploration. They also actively invest energy in the pursuit of goals based on these values. Their commitment and focus tend to make them better achievers than individuals from the other three status groups. They also tend to be more productive, independent and self-assured. In addition, their future orientation gives them a sense of calm and purpose. The values they

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commit to create a stable personality and consequently a high level of self-esteem are fostered. Adolescents with an identity achievement status tend to be well-adjusted individuals (Cummings, 1995).

Blasi and Milton (1991) disagree with Erikson and Marcia. They see identity development not in terms of stages with fixed boundaries, but rather in a more developmental light.

2.4.1.3 Blasi and Milton's four levels of identity

As individuals mature so their identities gradually develop. The older people get the more strongly their identities establish themselves. According to Blasi and Milton, the choice of an occupation, one's sexuality, sex roles and the adoption of a value system play an important part in determining one's identity. The specific contents of these options, however, like ethnicity, lifestyle and ideals may vary, although they also contribute to the definition of oneself. Blasi and Milton go on to state that "wherever the basic characteristics (of the identity) change in a significant way, one's identity changes accordingly, whether or not its specific context has changed" (p.219).

Having dealt with their view of identity, it becomes necessary to investigate the four levels of development they suggest.

(A) Social role identity

This is almost a pre-identity phase. Individuals have a slight sense of self or idea of who they are. These ideas of who/what they are, are determined mainly by superficial attributes, actions and social interactions. No fixed sense of identity exists, they are the way they look and the way people react to them. This is a stage of self-consciousness where what people say and think of individuals is of the utmost importance to them.

(B) Identity observed

This stage sees a sense of self beginning to develop. Individuals begin to discover a uniqueness or sense of self inside themselves (Blasi & Milton, 1991). The role

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of reflection and introspection becomes very important in this regard. The self or sense of identity is thus viewed as something that exists within and needs to be discovered rather than something that has to be decided and constructed. An awareness of self develops in contrast to the superficial evaluations of the previous stage. Adolescents become more in touch with their feelings and are better able to express and verbalise them.

(C) Management of identity

The awareness of vague feelings, characteristic of the previous stage, gives way to firm standards, values and a philosophy of life. Adolescents begin to feel they have a stake in the future. The result is an increase in goal-directed activity, a desire to solve problems and a feeling of responsibility for their lives. They come to realise that their identities are something to be worked out and discovered in daily action (Blasi & Milton, 1991).

(D) Identity as authentic

During this period individuals discover the conflicts and paradoxes within themselves. This stage is much like Ivey's (1993) concept of dialectic or systemic cognitive development. Perhaps there is a connection between cognitive development and the deepening sense of personal identity. The focus is also less egocentric during this phase. While individuals begin to affirm their autonomy as people they also become aware of themselves in relation to the group or society. These individuals are able to see themselves as autonomous entities, but at the same time, as part of a subculture, ethnic group or society. This, in turn, leads to increased openness and enables adolescents to link who they are to what happens in the greater society/culture they find themselves in (Blasi & Milton, 1991).

While not a specific theoretical framework, the effect of gender roles on identity formation cannot be overlooked. All three approaches dealt with previously have, to some extent, included the role of gender during identity formation. Having said this, the physiological development that takes place during puberty forces gender onto the forefront of identity formation during early adolescence. Consequently, the issue requires further attention.

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2.4.1.4 Gender roles

Cummings (1993) defines gender-roles as "a combination of the behaviours, attitudes and personality characteristics that the culture considers appropriate for one's sex" (p.252). In other words, gender roles are the cultural guidelines for individuals' behaviour depending on whether they are male or female. Since these guidelines are culturally determined, the factors affecting gender roles are to be found primarily in the socio-cultural environment.

The first and most important influence in gender role development is the family (Craig, 1996). Parents tend, knowingly or unknowingly, to encourage their children to engage in behaviours that are stereotypical of their gender. The age old adage " boys don't cry" is an example of how the stereotypical masculine quality of strength is conveyed to young children. The colours children are dressed in, different types of parent child dialogue, different rules and different codes as well as methods of discipline all contribute to young children's perceptions of what it means to be male or female.

The second influence is cognitive development. According to Craig (1996), as children get older, they become very aware of the existence of another gender. The characteristics which separate them from the opposite gender continue to grow clearer as they get older. Children thus have a cognitive framework concerning the differences between males and females. Once the abstract cognitive abilities of adolescence have developed, individuals are able to attribute personality characteristics and stereotypical behaviours to this framework (Steinberg, 1993). Cognitive development thus enables individuals to develop very complete and sophisticated gender stereotypes. This affects identity development by providing individuals with guidelines for gender-appropriate behaviour.

The final influence is society's reaction to an individual's gender. Like the family, society tends to treat men and women differently. These differences may be pronounced, in the case of different dress codes or voting rights, or they can be subtle, such as fewer opportunities in the job market or preferential treatment for

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one gender. In general the family reflects society's views on gender and society, in turn, reinforces the early teaching of the family with regard to gender stereotypes.

Since gender has an influence on our relationships, sexuality, careers and many other areas of life, it is obvious that one's view of the role one fulfils as a man or woman has a profound impact on one's identity. This influence is even greater during puberty when the adolescent is in the process of becoming fully man or woman on a physiological as well as a social level. Identity is closely related to the concept of self-esteem. It has previously been determined that individuals' identities consist primarily of the various roles they must fulfil. Self-esteem is determined by people's evaluations of themselves in terms of their specific roles.

2.4.2 The development of self-esteem during adolescence

The concept of self-esteem may be better understood with the help of the following example. A heterosexual, divorced mother of three who works as an engineer and holds generally conservative political views. Most people would agree that this description gives a fairly clear indication of who and what this woman is. Yet the description itself is very vague and incomplete. The key is our perceptions of how a person who fits this description could generally be expected to behave. In addition, we would evaluate her proficiency in each of the roles by comparing her to the most widely accepted stereotype available to us. She would in all probability evaluate her self-worth, not only in each of these areas but also as a person, by comparing her performance to a stereotype she holds. Thus if identity can be defined as who individuals are (the sum of their roles) then self-esteem can be defined as individuals' perceptions of their ability to fulfil these roles in accordance with specific stereotypes (McKay & Fanning, 1992).

According to McKay and Fanning (1992), self-esteem is determined by the extent to which individuals are satisfied with their identity or role fulfilment. Thus if identity is the individuals' perception of who they are, then self-esteem is their perception of how good they are at being themselves. The self-awareness that results from adolescent cognitive development plays a vital role in self-esteem

(Craig, 1996). During childhood, self-esteem or a sense of self-worth is based on what significant others, such as parents, think of the individual. Children are worthwhile to the extent that their parents communicate their acceptance and approval to them. With the development of introspection and self-awareness a change occurs (Steinberg, 1993). Adolescents now determine their self-worth by evaluating their performance against their developing stereotypes. Determining self- worth thus becomes an increasingly intrapersonal function.

2.4.2.1 Self-esteem and psychological wellbeing

The way in which individuals view themselves has a significant effect on their psychological wellbeing (Craig, 1996). Thus the higher one's self-esteem is, the better one's level of psychological wellbeing. Individuals who perceive themselves (with a fair degree of accuracy) to be capable and competent are less likely to develop emotional or behavioural problems (Wentzel & Asher, 1995). This is largely due to the fact that individuals with high self-esteem feel valued by those around them, experience a high degree of self-acceptance and evaluate themselves more positively (Adams et al., 1994). It is thus evident that people's levels of self-esteem are dependent upon how they perceive their daily functioning, in various areas, in relation to certain personal/cultural role requirements. This may be likened to the person-centred concepts of the real and ideal self (Corsini & Wedding, 1989). The ideal self represents the total fulfilment of every role to the fullest extent, while the real self is an accurate self-evaluation of how individuals fulfil these roles in everyday life. The greater the discrepancy between the two, the lower the individual's self-esteem tends to be. Thus for adolescent individuals self-esteem is dependant upon how well they are progressing toward adult-role competence and how successful they are at being teenagers (Manaster, 1989).

2.4.2.2 Agents of self-esteem development

Having touched on the effect of self-esteem upon psychological wellbeing, it is necessary to investigate how self-esteem functions. Self-esteem is a multifaceted phenomenon (McKay & Fanning, 1992). Certain individual differences affect the development of self-esteem. However, certain basic principals form a framework

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within which self-esteem develops.

The first of these elements is a stable self-concept. Self-concept may be defined as the traits, abilities and attributes individuals ascribe to themselves (Steinberg, 1993). The self-concept provides a reference frame for individuals. They are only able to judge their performance if they have an idea of what they are capable of. Individuals' self-concepts provide this yardstick. By inter-acting with people around them, adolescents develop an idea of whether they are good or bad, strong or weak, clever or stupid, capable or incapable (Cummings, 1995). These self-evaluations or self-concepts may be accurate or inaccurate. If they represent overestimations of individual abilities adolescents may falsely feel they are not achieving their potential. This may, in turn, negatively influence self-esteem. On the other hand, adolescents who underestimate their abilities may tend to shy away from challenges. In a longitudinal study performed on Chinese adolescents, Chen, Rubin and Li (1997) found that individuals with negative self-evaluations were more inclined to have low self-esteem and display social and emotional problems. Marais and Bornman (1989) found that adolescents with negative perceptions of their abilities tended to become underachievers and developed a resistance to school and learning. Negative self-appraisals seem to have a disruptive effect on individuals' functioning. However, a stable self-concept provides a frame of reference for functional judgement and behaviour (Adams et al., 1994). This gives individuals a sense of worth, certainty and decisiveness. The result is an improved level of self-esteem.

The development of self-esteem is also influenced by individuals' beliefs concerning the control they have over what happens in their lives. This is commonly referred to as their locus of control. The more responsible individuals feel for their behavioural outcomes, the higher their self-esteem is likely to be. This feeling of personal responsibility promotes an internal locus of control (Adams et al., 1994). It is the view of McKay and Fanning (1992) that people with an internal locus of control have fewer problems with self-esteem and those that do experience difficulty, have a far better therapeutic prognosis than individuals with an external locus of control. Consequently, the more able and

proficient adolescents feel in fulfilling their roles, the more internal their locus of control will be and the better their self-esteem will be. Conversely, adolescents who feel that their lives are largely controlled by external forces such as teachers, parents and peers are more likely to experience low levels of self-esteem (Wentzel & Asher, 1995).

The third factor that plays a role in the development of self-esteem is adolescents' vulnerability (Adams et al., 1994). It has been made quite apparent throughout this chapter that adolescence is a period of intense physical, cognitive and social change. This process of change causes uncertainty and increases individuals' vulnerability to outside influences. The social development that adolescents undergo makes them acutely sensitive to the opinions of other people. The feedback they get from their environment, if not effectively filtered by their sense of self-evaluation, could damage their self-esteem. The labels that young people often receive in the classroom or on the sports field are generalised by individuals to totally non-related areas of their lives. In so doing a negative self-concept is created (Chen et al., 1997; Wentzel & Asher, 1993). Changes during puberty create an uncertain environment where the adolescent's self-esteem is vulnerable to negative influences.

The final element is self-awareness. The concept of self-awareness is closely related to the vulnerability created by changes during puberty and early adolescence. Self-awareness is made possible by adolescents' increased abilities to think about their thoughts. Meta-cognition enables adolescents to develop sensitivity for the way people see them. This self-awareness is a valuable life skill (Adams et al., 1994). It enables individuals to become aware of their behaviour and also to regulate it. However, if adolescents become too concerned with people's perception of them, a state of self-consciousness develops. According to Adams and his colleagues, self-consciousness is the emotional state that accompanies self-monitoring or self-awareness. Examples of self-consciousness during adolescence are visible in the personal myth that was discussed earlier. This total pre-occupation with how people react to the individual may cause them to constantly adjust to the environment and never

develop a stable internal self-concept.

It is thus obvious that the inter-play between these four factors and the developmental nature of adolescence can have far reaching implications for an individual's sense of self-worth.

2.4.2.3 The impact of puberty on psychosocial development

The aim of this chapter has been to create an understanding of the developmental nature of adolescence. The physical, cognitive, emotional and social changes that occur have already been discussed and the increased academic demands placed upon adolescents will be dealt with later. These changes in appearance and competence may have a far-reaching effect on adolescent individuals. It is thus understandable that many individuals experience adolescence, and puberty in particular, as a time of increased vulnerability and uncertainty (Adams et al., 1994). Adolescents who experience an average rate of developmental during puberty seem to have difficulty forming an identity and maintaining their self-esteem. Moreover, adolescents who develop ahead of or behind their peer group may experience even greater difficulty in these areas. It is obvious that at this time of heightened self-awareness, that any deviations from the normative developmental path are going to have far reaching implications (Graber et al., 1997).

Individual variations in the rate of physiological development are especially obvious. Since much of adolescents' social development depends on how they are physically perceived, any deviations in physiological maturation have the potential to affect identity and self-esteem development (Craig, 1996). Physical maturation is often incorrectly used as a standard for assessing cognitive and social maturity (Adams et al., 1994). As stated earlier, people tend to react to adolescents based on these physical evaluations (Cummings, 1995). This often causes adolescents to react differently (more maturely) and thus begins a social inter-play that allows individuals to develop the socially accepted competencies of adulthood. Thus if individuals' cognitive and social aspects of development parallel the physical aspects they begin to gradually assume more adult roles with

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regard to career, family, love, ideology and other important areas of life (Steinberg, 1993). However, if they do not seem physically mature this process tends to be inhibited. Conversely, adolescents who are not as cognitively and/or emotionally developed as they are physically developed, may experience anxiety and struggle to adjust to the increased demands made upon them (Graber et al., 1997). Consequently, the effects of developmental variation will be investigated.

Adolescents whose physical development exceeds their emotional and cognitive development are often overwhelmed by their newfound status. Parents and teachers often expect more from these individuals. These adolescents are often given tasks that they do not have the ability or sense of responsibility to perform (Steinberg, 1993). As a result these individuals feel that they are failures and this damages their self-esteem. Since they are not able to draw attention to themselves as achievers, they often begin to engage in disruptive or deviant behaviours (Graber et al., 1997). Steinberg makes the observation that these adolescents are rushed in their development. The average or slower developing adolescents experience more gradual changes in their roles and consequently have more time to adjust. He also points out that while the fast maturer often experiences short-term advantages, the slower and more effective transition of the average to slow developer pays dividends in adulthood. These people tend to have fewer clashes with authority, engage in less dangerous behaviour and generally appear to be better adjusted adults. While early developers tend to engage in delinquent behaviour, gender differences do exist with regard to the specific nature of these behaviours. According to Graber and his colleagues, early maturing males experience higher levels of depression. They also tend to experience a greater degree of conflict with parents and teachers. On the other hand girls who develop earlier tend to be less popular, more self-conscious, are more likely to develop eating disorders and tend to be more promiscuous than their peers.

Adolescents who are slow to develop often feel very self-conscious and inferior. Their lag in physical development often causes people to treat them as less emotionally mature, less responsible and cognitively less advanced (Cummings, 1995). They also tend to be viewed as less competent by their peers and are

consequently less popular (Wentzel & Asher, 1995). The primary difficulties related to slow physical maturation are increased self-consciousness and a lack of self-esteem. Their inability to fulfil the physically mature roles of adolescence leads to feelings of inferiority. These individuals often feel they are not successful as adolescents (Manaster, 1989). While early developers tend to engage in delinquent behaviour, late developers tend to underachieve, lack self-confidence and be withdrawn.

It is obvious that deviations in individual rates of maturation can have a negative effect on adolescents. However, it would seem that late developers tend to develop less serious problems and have a greater chance of catching up and becoming effectively adjusted adults (Graber et al., 1997; Steinberg, 1993). Having said this, adolescents who develop timeously tend to adjust more easily and experience fewer social problems than both fast or slow developers.

2.5   SUMMARY

Adolescence is a period of immense physical, cognitive, emotional and social development. It is during this period that individuals are expected to prepare for their various adult roles. The beginning of adolescence is marked by the onset of puberty and it is considered to be over once individuals reach the level of cognitive, social, emotional, physical and professional development that is deemed to be adult by their particular culture. This road to adulthood is often a long and difficult one, which requires individuals to develop skills and competencies on various levels.

One area in which adolescents are expected to develop is the physiological realm. Adolescents are expected to develop the primary and secondary sexual characteristics of their specific genders in order to be able to fulfil their adult reproductive roles. Deviations in physical development can have a profound effect on all areas of their lives.

Cognitive development also features prominently during adolescence. Adolescent individuals experience increases in their cognitive abilities that enable them to process

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more complex and sophisticated problems than they were able to as children. These advances in memory, organisation, concentration and meta-cognition also have certain implications for adolescents' social and emotional development.

The final area of development is the psychosocial realm. Here adolescents learn to live with themselves (intrapersonal) and with others (interpersonal) in a more adultlike fashion. In order to do so, they must become more aware of themselves as well as the effect they have upon other people in their social environment. The process of self-awareness centres around discovering an individual identity and committing to the various roles that accompany this identity. The extent to which adolescents successfully complete these tasks, largely determines how they feel about themselves and how effectively they are able to interact with other people.

Thus, while each facet of adolescent development was dealt with separately, it is clear that all areas of development are interdependent. Adolescents are thus faced with challenges and opportunities in a variety of areas. This can often be a difficult and confusing time for these individuals. They are faced with new and unfamiliar situations each day, yet the large majority of adolescents receive little or no guidance during this period. This could be potentially harmful to their development as adolescents and consequently their functioning as adults.

There can be no doubt that puberty and early adolescence confront individuals with serious challenges in all aspects of their lives. However, the situation is often further complicated by the fact that these individuals are simultaneously faced with the challenge of making a successful academic transition from one educational environment to another. The specific academic challenges facing young adolescents will be discussed in the next chapter.

CHAPTER 3
ACADEMIC ACHIEVEMENT

During the preceding discussion on adolescence, various references were made to the mediating role of the education system on individuals' cognitive, emotional and social development (Luthar, 1995; Sternberg, 1988). The aim of this chapter is firstly, to shed some light on the effect that the physical, cognitive and emotional development that take place during adolescence has on individuals' academic achievement. Secondly, to investigate the role of the family and peer group during this period. Thirdly, to investigate the physical and social composition of the educational environment during adolescence, as well as to highlight the challenges that the transition from primary to secondary school presents to adolescents. The final objective of this chapter is to evaluate adolescents' experiences of the transition and the ways in which they attempt to cope within this challenging situation. In order to address the adolescent academic experience effectively, a definition of academic achievement will first need to be formulated.

3.1   DEFINITION OF ACADEMIC ACHIEVEMENT

The term academic achievement is difficult to define and operationalise. The definition one arrives at, is largely dependent upon one's view of human intellectual potential. The most basic view of academic achievement emphasises how well an individual performs in a specific test or examination. Here the focus is clearly on how high individuals score during any given evaluation.

According to Jones and his colleagues (1995), two general views of intellectual potential exist with regard to academic achievement. The first of these is the entity view of intelligence. Here intelligence is seen as an innate and constant ability. From this vantage point, intelligence can be measured by means of an intelligence test and predictions made with regard to an individuals' academic abilities. Consequently, academic achievement refers to the degree to which individuals' academic performances

match or exceed the predictions made on the basis of intelligence measurements. The second point of view is that intellectual ability is constantly in a state of flux. Individuals' life experiences and efforts play a role in determining their intelligence. This point of view is referred to as the incremental view of intelligence (Dweck & Leggett, 1988). Here individuals' academic achievements are defined in terms of their perceptions of how well the course material has been internalised. These evaluations are also made within the contexts of the specific life experiences of these individuals and are not solely dependent on external verification, such as examination results.

The definition of academic achievement adapted for the purpose of this study is based largely on the incremental approach. Academic achievement will be defined as the score achieved by an individual during any given academic evaluation. In keeping with the incremental approach to intelligence, fluctuations in academic achievement will be investigated, but no inference will be made with regard to the quality of learners' performances or assumptions made with regard to their intellectual potential.

Finally, in accordance with current trends in education, individuals attending school and other educational institutions will be referred to as learners and not pupils (Capel, Leask & Turner, 1995; Pretorius, 1996).

Adolescents' academic achievement may be influenced by a variety of factors both within the individuals themselves and in their educational environments. The focus of the following section will thus be to investigate the intrapersonal and environmental factors that may play a role in academic achievement.

3.2   FACTORS AFFECTING ACADEMIC ACHIEVEMENT

The fact that many learners perform either above or below their apparent academic potential indicates that factors other than academic or intellectual ability play a role in academic performance (Goleman, 1995). No linear relationship exists between intellectual ability and academic achievement. The factors potentially influencing academic achievement are too numerous to list, let alone analyse and discuss. In an attempt to create some type of parameter, the factors most likely to influence academic

achievement as well as be influenced by academic achievement during early adolescence will be highlighted. Due to the complex nature of human functioning, no cause and effect relationship can be established between single isolated factors and academic achievement. Events and circumstances in individuals' lives are often involved in a bi-directional interaction with those individuals' academic achievement.

According to Van der Merwe (1989) the skills, maturity and academic achievement of young adolescents in South African schools are often problematic. Van der Merwe lists psychophysical development, emotional development, family life and adolescents' attitudes to both their ability and the education system as the most important factors affecting academic achievement during early adolescence. Due to a lack of recent and relevant research on many of these elements among young adolescents, reference will be made to relevant research conducted amongst older adolescents during the transition from secondary to tertiary education. It is obvious that there are certain differences between the physical, cognitive and social development of young adolescents and their older counterparts (Craig, 1996; Cummings, 1995). However, the challenges of educational transition and the skills needed to adjust to these challenges present similar difficulties to these two groups of individuals.

The most salient factors affecting adolescent academic achievement are illustrated in Figure 3.1.

Fig 3.1 :   **Schematic representation of the factors most often related to academic achievement during adolescence**

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┌─────────────────────────────┐          ┌─────────────────────────────┐
│      Personal factors       │          │      Domestic factors       │
│                             │          │                             │
│  ◆ Physical                 │          │  ◆ Positive factors         │
│  ◆ Cognitive                │          │    - support                │
│  ◆ Emotional                │          │    - expectations           │
│     - Interpersonal         │          │  ◆ Negative factors         │
│     - Intrapersonal         │          │    - family conflict        │
└─────────────────────────────┘          └─────────────────────────────┘
              │                                          │
              ▼                                          ▼
              ┌────────────────────────────────┐
              │                                │
              │          ACADEMIC              │
              │          ACHIEVEMENT           │
              │                                │
              └────────────────────────────────┘
                              ▲
                              │
    ┌──────────────────────────────────────────────────┐
    │  The transition from primary to secondary school  │
    │                                                    │
    │  ◆ Composition of the education system             │
    │  ◆ Academic skill discrepancies                    │
    │  ◆ Mechanisms of adjustment                        │
    └──────────────────────────────────────────────────┘
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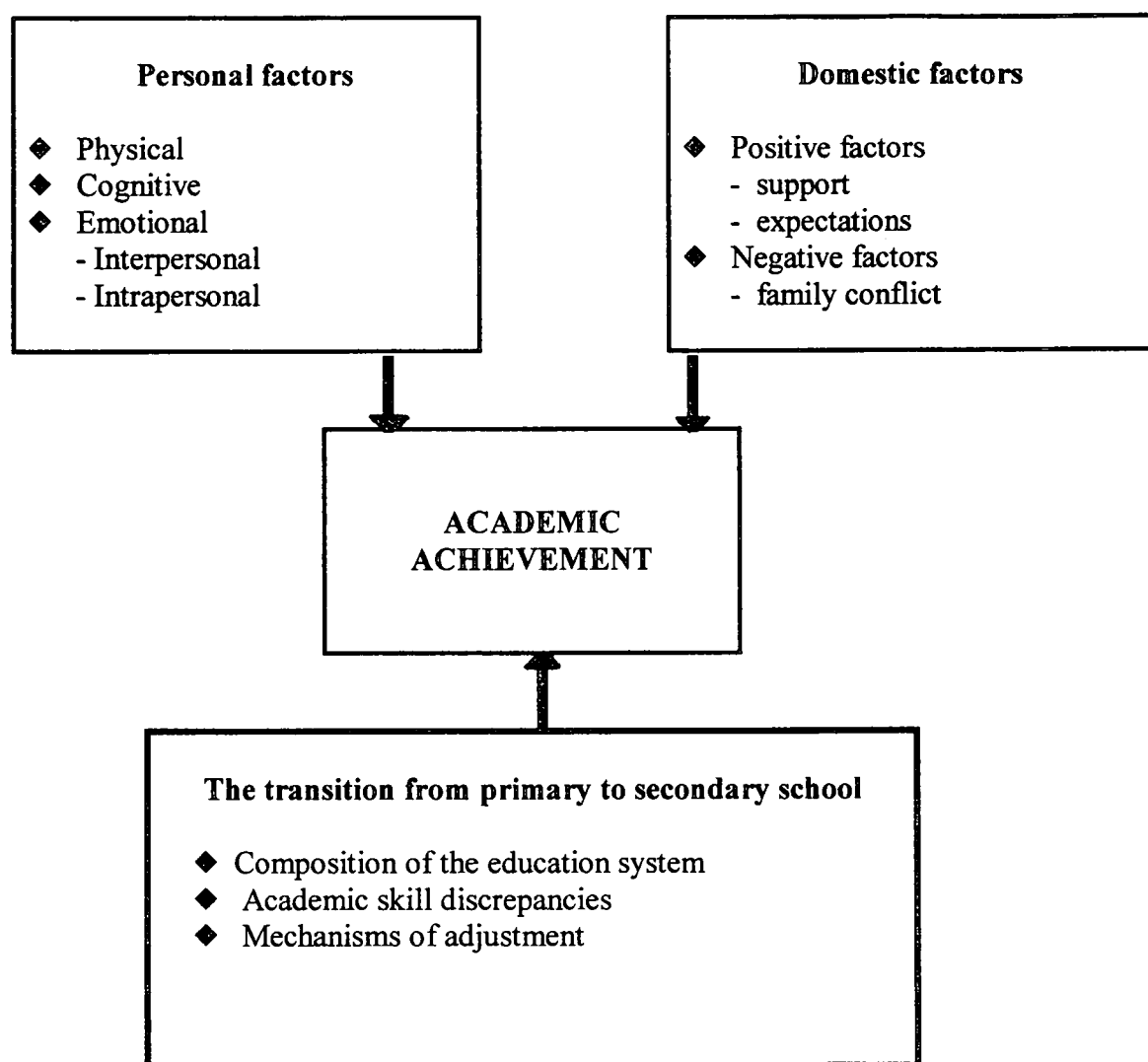
The factors illustrated in figure 3.1 require further attention.

3.2.1 Personal factors

The term personal factors is used to refer to all the factors and changes that adolescents experience during puberty. It is evident from the discussion in the previous chapter that the changes that individuals undergo during puberty and early adolescence have an effect on all areas of their functioning. It thus stands to reason that any discussion of academic achievement during this period has to take the effects of adolescent development into account. According to van der Merwe (1989), educators are not always acutely aware of their role as agents of change

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and development in adolescent learners' lives. The challenges adolescents present to secondary school teachers and the effect of this developmental stage on the education system is well documented (Capel, Leask & Turner, 1995; Strauss, 1987). Similarly, sight should never be lost of the reciprocal effect the education system has upon the cognitive and social development of the learner (Jones et al, 1991; Slate, Jones & Dawson, 1993; Wentzel & Asher, 1995). The senior primary and early secondary school is a period during which the education system has the opportunity to act as a catalyst for cognitive and social development. Van der Merwe views the education system as a potential springboard for social and cognitive development during this period.

Specific attention will now be given to effects of physical, cognitive and emotional development upon adolescent academic achievement.

3.2.1.1 Physical factors

As stated in the chapter on adolescent development, individuals' physiological development may influence their self-esteem. The level of these individuals' self-esteem will, in turn, influence the degree to which they are prepared to take risks. The more learners are prepared to expose themselves to the educational environment, the greater their chances for learning and development become (Capel et al., 1995). Thus the more confident adolescents feel about their physical appearance, the more likely they are to expose themselves to the education experience and the greater their capacity for effective learning becomes.

More self-confident learners are more inclined to ask for help and approach teachers for assistance (Jones et al, 1991). Also, the more mature, physically attractive or intelligent learners appear, the more positively teachers tend to evaluate them (Cline & Ertubey, 1997). This often leads to a situation where learners who are perceived to be intelligent or mature are focused upon and, qualitatively speaking, receive a better education than their negatively perceived counterparts (Taylor et al., 1994). Thus the more physically mature adolescents are, the more positively they are perceived and evaluated within the education system. This results in increased self-confidence which, in turn, allows

adolescents to present themselves more positively (Hinslaw, 1992; Luthar, 1995). This positive self-presentation allows the adolescent to be perceived as more able and mature. The cyclic nature of this relationship suggests that physically developed adolescents are more likely to benefit from the education system than their late developing counterparts. Thus the more physically mature the adolescent appears, the better.

However, physical development is not the only factor affecting adolescents' experiences of their education. Puberty and early adolescence is also a period during which drastic changes occur in the way individuals process information within their environment. The effect of the cognitive changes discussed in chapter two on adolescents' educational lives will now be investigated.

3.2.1.2 Cognitive factors

It is necessary to note that, as stated earlier, a shortage of relevant recent literature on the experiences of young adolescents complicates discussion of adolescent academic achievement. Many theories and models have been formulated with regard to the quantitative differences between childhood and adolescent cognition(Ivey, 1993; Piaget,1972; Sternberg, 1988). A variety of these models and theories are discussed in the previous chapter. However, very little information is available with regard to non-intellectual cognitive development and the effect it has upon academic achievement (Goleman, 1995). Consequently, research done on other populations will also be addressed in an attempt to gain insight into the effect of the full range of cognitive development on the academic world of adolescence.

The entity approach to intelligence, referred to earlier, would view adolescent learners as having fixed intellectual abilities. These abilities can be verified by standardised measures of intelligence and learners' performances during various academic evaluations (Jones et al, 1995). Consequently, adolescents could be expected to perform according to their measured abilities. Thus more intelligent learners' could be expected to do better than those classified as less intelligent. Here the cognitive development of adolescence only serves to perpetuate the

inherent differences in intellectual ability. However, relying solely on academic ability and standardised measures of intelligence for the prediction of academic achievement is questionable (Sedlacek & Adams-Gaston, 1992; Young & Sowa, 1992). Petrie and Stoever (1997) came to the same conclusion in their study of the academic and non-academic factors predicting the academic performance of tertiary student athletes. They state that factors other than traditional academic or intellectual ability are of paramount importance in the study of academic achievement.

One of the so-called non-academic factors that may influence academic achievement is resilience. Resilience refers to an individual's ability to function at a high level after experiencing a stressor or stressors (LePage - Lees, 1997). This point of view would suggest that learners who are resilient would be better able to achieve academically than learners who are not as able to deal with stressors within the educational environment. The concept of resilience is closely related to what Goleman (1995) refers to as emotional intelligence. Goleman goes on to say that the traditional (entity) view of intelligence or cognitive development is narrow and ignores the possibility that other factors could play a role in academic achievement. Taylor (1990) suggests a shift in the emphasis placed on the classical concepts of intelligence to an approach where skills in dealing with study and academic problems play a more important role. This skills-based approach to cognitive development during early adolescence would benefit learners at both ends of the measured intelligence continuum. Less traditionally intelligent learners would be able to focus more on skills aimed at developing academic problem solving strategies, while the so-called intelligent learners would be able to come closer to achieving their full intellectual potential.

It is apparent that physical and cognitive factors play an important role in the adolescent learners' educational experience. However, they are not the only influences at play. To this end the role of emotional factors will also be discussed.

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3.2.1.3 Emotional factors

The term emotional factors is used to refer to both the inter- and intrapersonal factors involved in academic achievement. It is often difficult to determine a linear relationship between inter- and intrapersonal factors and academic achievement. Academic achievement seems to influence these factors as much as it seems to be influenced by them (Green et al., 1980). By the same token, much of the overlapping and bi-directional interaction that occurs between the inter- and intrapersonal realms makes it impossible to draw an arbitrary distinction between the two. Social competence, self-esteem and academic achievement are inter-related in a complex interdependent manner (Chen et al., 1997). However, various methodological difficulties make it impossible to establish any type of linear relationship between the two. Instead they are seen as constantly influencing each other. However, the following discussion will, for the purposes of clarity, attempt to divide the interpersonal factors (socialisation and peer influence) from the intrapersonal factors (self-esteem).

(A) Interpersonal factors

These are factors related to adolescents' interactions with their peers and teachers. Interpersonal factors are being dealt with first due to the important influence that adolescents' social relationships have on their functioning. The way individuals function socially often largely determines how they feel about themselves. Adolescents who are not accepted by their peer group tend to be less satisfied with themselves as people (Green et al., 1980). Wentzel and Asher (1995) found that adolescents' peer relationships were related to their academic lives. The adolescent peer group is an especially powerful source of motivation and support during the middle school years (Gottlieb, 1991; Savin-Williams & Berndt, 1990). Brown (1990) found that learners are inclined to categorise their peers according to these individuals' levels of academic achievement. This trend is said to be especially evident during early adolescence. A cyclic pattern seems to emerge, whereby the degree to which learners are accepted by their peers influences how well they do academically. This in turn, determines their peer group membership and acceptance. Thus social competence and academic

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achievement interact with each other in a very real way.

Various researchers have stated that learners who display sociable and pro-social behaviour are more likely to enjoy a high level of academic achievement (Chen et al., 1997; Green et al., 1980; Masten et al., 1995; Wentzel & Asher, 1995). An inability to function well socially leads to withdrawal from the peer group and negatively influences academic achievement (Green et al., 1980; Wentzel, 1991). According to Chen and his colleagues, learners who are accepted and liked by their peers are more likely to hold leadership positions and achieve academically, while Coie, Dodge and Kupersmidt (1980) found that adolescents' who are rejected by their peers are more likely to experience academic difficulties or drop out of school. The potentially monumental effects of peer acceptance or rejection on academic achievement are thus apparent. This is emphasised even further by the effect peer relations have on teacher evaluations.

Learners who are rejected by their peers also tend to be negatively perceived by their teachers. Taylor (1989) found that teachers were more inclined to dislike learners who were rejected by their peer group. Wentzel and Asher (1995) found that learners who were rejected by their peers were perceived by their teachers to be less interested in schoolwork, less independent, more impulsive in their study behaviour and more likely to display problem behaviours. Thus the more popular learners are the more likely they are to hold leadership positions and to achieve academically. While rejected adolescents are less likely to be perceived as leaders by their teachers and peers or achieve academically.

Thus far, two categories of adolescent learners have been dealt with. The first were the popular or accepted adolescents, while the other category consisted of rejected or unpopular adolescents (Goodenow, 1993; Wentzel & Asher, 1995). However, the literature makes mention of a third category. They are referred to as neglected adolescents. They are not popular and are usually not regular members of a peer group. However, unlike their rejected counterparts, these adolescents are not disliked by their peers. Most of their peers exhibit a neutral attitude towards them. According to Goodenow, these neglected adolescents tend to perform as

well as popular adolescents do academically. However, they are far less likely to hold leadership positions. It is hypothesised that the neglected adolescent learners do well academically for two reasons. Firstly, they have fewer social and extramural activities than the popular learners do (Wentzel, 1994). This allows more time for solitary pursuits such as study. Secondly, Wentzel and Asher (1995) state that acceptance by the teachers and educational institution is more important to these learners than acceptance by their own peer group. Thus they perform well academically in return for the degree of acceptance they get from the educational institution.

The social status of adolescent learners would thus seem to influence their academic achievement, while their achievement helps determine their social status. However, it has been repeatedly stated that adolescents, more so than other age groups, depend heavily on feed back from others in order to formulate an opinion of themselves and their own worth. The role that interpersonal relationships play in adolescents' intrapersonal world thus needs to be investigated.

(B) Intrapersonal factors

According to Green and his colleagues (1980), social competence may be evaluated from the point of view of the adult, peer group or individual. The intrapersonal factors affecting academic achievement are related primarily to individuals' own perceptions of their social and academic capabilities. As adolescence is a period dominated by the development of social relationships and the development of a personal identity within these social boundaries, many of adolescents' self-perceptions are dependant on how others perceive them. It is thus important to view the intrapersonal factors affecting academic achievement as closely related to adolescents' experiences of their interpersonal world (Chen et al., 1997).

Connell and Wellbrom (1991), suggest that adolescents who are accepted and liked by their peer group tend to be more self-confident and have a higher evaluation of themselves. This increased self-confidence makes learners more

inclined to engage in classroom activities and be open to new learning experiences. It is thus evident that the degree to which adolescents are able to socialise effectively and be accepted by the peer group affects their perceptions of themselves as effective people and effective learners. According to Finn (1989), high school dropouts often report feelings of alienation, isolation and emotional withdrawal from the school environment. Their emotional states, resulting from their perceived abilities to socialise effectively have an enormous effect on their motivation. Parkhurst and Asher (1992) concur with this view. According to them learners often drop out as a result of low self-esteem or other emotional reasons and not as a result of strictly academic factors.

The second factor that influences learners' intrapersonal wellbeing, in relation to their academic achievement, is their locus of control. This refers to the degree to which adolescents believe they are in control of their lives. The greater control learners feel they have over their lives the better their academic performance tends to be. According to Wentzel (1991), learners who display independence, by mastering subject matter on their own, tend to feel more self-assured and self-confident. They also tend to demonstrate a higher level of impulse control and perform better academically than their less self-assured counterparts. These self-confident learners are more likely to request and receive help from teachers (Chen et al., 1997).

Learners with an internal locus of control, in other words individuals who believe that what happens in their educational environment is in large part, due to their action, are less likely to perceive the school environment as hostile and threatening. According to Lazarus & Folkman (1984), learners with low self-esteem perceive the educational environment as dangerous and unpredictable. These individuals often feel out of control and unable to meet the standards expected of them (Crystal et al., 1994). Individuals who perceive to have little control over their lives may find it difficult to socialise effectively and may also develop a negative attitude towards school. This, in turn, may lead to a lack of motivation and consequently have a negative effect on their academic achievement (Masten et al., 1995).

While no causal relationships can be established, it is safe to assume that academic achievement, self-esteem and peer-acceptance all have a profound influence on each other. When Crystal and his colleagues (1994) found differences between the emotional wellbeing of high and low academic achievers, the high achievers reported fewer incidents of emotional distress and disturbance. With this in mind, various models that attempt to explain this interaction will now be discussed.

(C) *The interaction between interpersonal factors, intrapersonal factors and academic achievement*

Three models have been proposed to try and illustrate the relationship between adolescents' social functioning, emotional wellbeing and their academic achievement.

The first model was proposed by Maughan, Gray & Rutter (1985). They are of the opinion that academic performance or competence affects the adolescent learner's social functioning. Adolescents who do well at school are more likely to feel good about themselves. This self-confidence enables these individuals to function effectively in the social arena while, adolescents who experience academic difficulties tend to experience a sense of self-dissatisfaction or frustration that often spills over into their social relationships and may lead to behaviour problems.

Fig3.2: Schematic representation of the way academic achievement affects social functioning among adolescent learners (adapted from Maughan et al., 1985)

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                    ┌─────────────────────────────────┐
                    │      ACADEMIC EVALUATIONS        │
                    └─────────────────────────────────┘
                       │                           │
        ┌──────────────────────┐        ┌──────────────────────┐
        │  POSITIVE ACADEMIC   │        │      ACADEMIC        │
        │     ACHIEVEMENT      │        │    DIFFICULTIES      │
        └──────────────────────┘        └──────────────────────┘
                   │                              │
        ┌──────────────────────┐        ┌──────────────────────┐
        │   SELF-CONFIDENCE    │        │        SELF-         │
        └──────────────────────┘        │   DISSATISFACTION    │
                   │                     │        AND           │
        ┌──────────────────────┐        │    FRUSTRATION       │
        │     PRO-SCHOOL       │        └──────────────────────┘
        │     BEHAVIOUR        │                  │
        └──────────────────────┘        ┌──────────────────────┐
                   │                     │      BEHAVIOUR       │
        ┌──────────────────────┐        │  PROBLEMS AND LACK   │
        │   PEER ACCEPTANCE    │        │   OF SOCIAL SKILLS   │
        └──────────────────────┘        └──────────────────────┘
                                                  │
                                        ┌──────────────────────┐
                                        │    PEER REJECTION    │
                                        └──────────────────────┘
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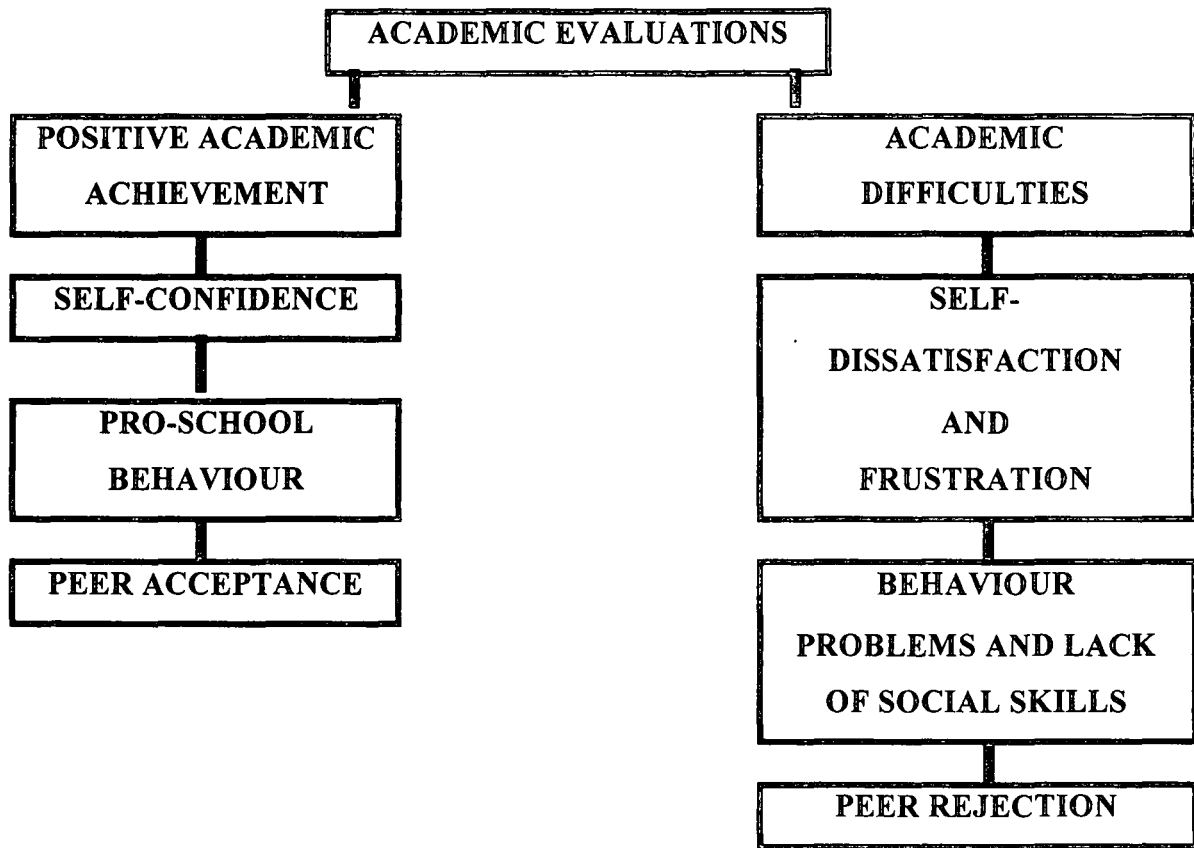
A second model (Wentzel, 1991; Wentzel & Asher, 1995) proposes a contrasting view. Here adolescents' social functioning is said to affect their academic achievement. Socially competent adolescents are accepted by the peer group. The peer group offers support in the form of emotional and social resources that help these adolescents achieve academically. While socially incompetent adolescents are less likely to be accepted by a peer group and have, as a result, less support. Consequently they have less of a chance of successfully negotiating the demands of the education system.

Fig 3.3: Schematic representation of the interaction between social competence and academic achievement (adapted from Wentzel & Asher, 1995)

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                        ┌──────────────────────────┐
                        │   ADOLESCENT LEARNER     │
                        └──────────────────────────┘
              ┌──────────────────┴──────────────────┐
    ┌──────────────────┐                  ┌──────────────────┐
    │    SOCIALLY      │                  │    SOCIALLY      │
    │    COMPETENT     │                  │   INCOMPETENT    │
    └──────────────────┘                  └──────────────────┘
    ┌──────────────────┐                  ┌──────────────────┐
    │ PEER ACCEPTANCE  │                  │  PEER REJECTION  │
    └──────────────────┘                  └──────────────────┘
    ┌──────────────────┐                  ┌──────────────────┐
    │      SOCIAL      │                  │  LACK OF SOCIAL  │
    │       AND        │                  │       AND        │
    │    EMOTIONAL     │                  │ EMOTIONAL SUPPORT│
    │     SUPPORT      │                  └──────────────────┘
    └──────────────────┘                  ┌──────────────────┐
    ┌──────────────────┐                  │ NEGATIVE ACADEMIC│
    │ POSITIVE ACADEMIC│                  │   ACHIEVEMENT    │
    │   ACHIEVEMENT    │                  └──────────────────┘
    └──────────────────┘
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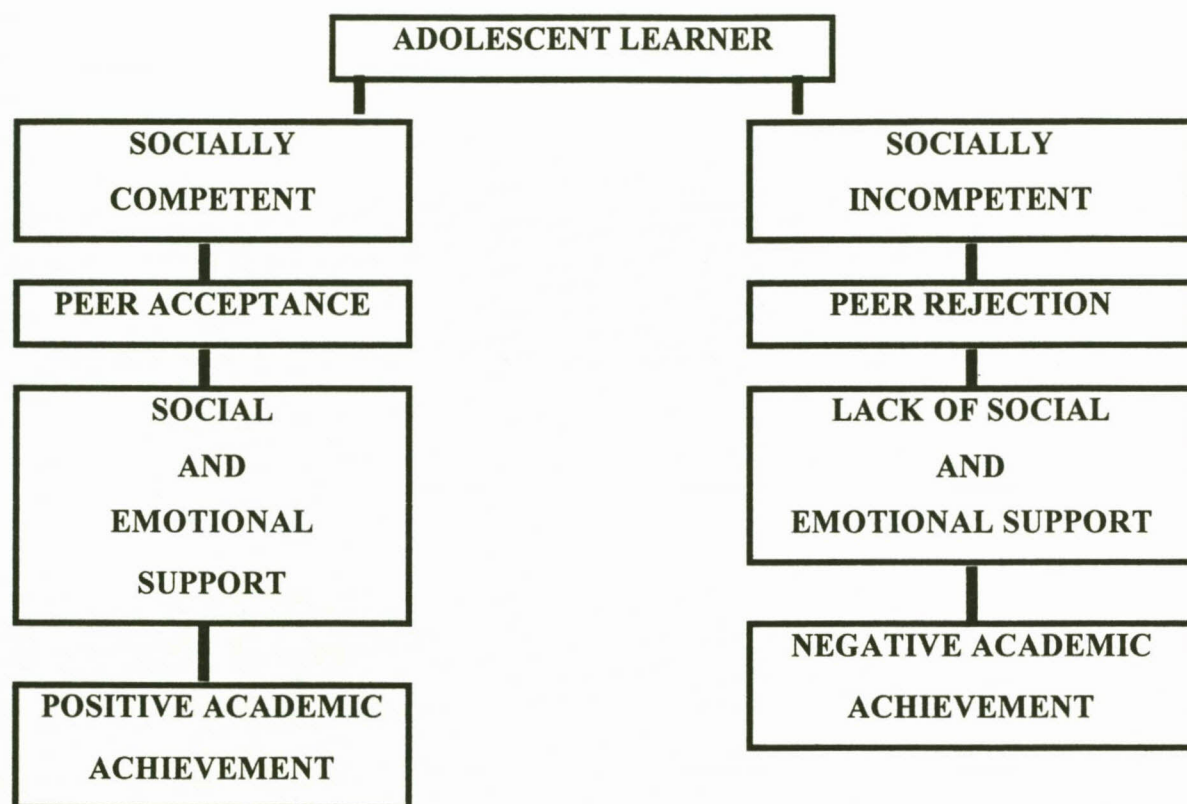
The third model (Chen et al., 1997; Hinslaw, 1992) suggests that social functioning and academic achievement may influence each other. Chen and his colleagues (1997) state that while this bi-directional model is plausible, it still has to be proved by empirical research. However, this may be problematic due to the difficulties involved in investigating these variables simultaneously in a longitudinal study. The main premise here is that social competence influences self-esteem which in turn affects academic achievement and vice versa.

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Fig 3.4: Schematic representation of the reciprocal relationship between social competence and academic achievement (adapted from Hinslaw,1992; Chen et al., 1997)

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              ┌─────────────────┐
              │    ACADEMIC     │
              │   ACHIEVEMENT   │
              └─────────────────┘
               │               │
        ┌──────────────┐   ┌──────────────┐
        │    SOCIAL    │───│  SELF-ESTEEM │
        │  COMPETENCE  │   │              │
        └──────────────┘   └──────────────┘
```
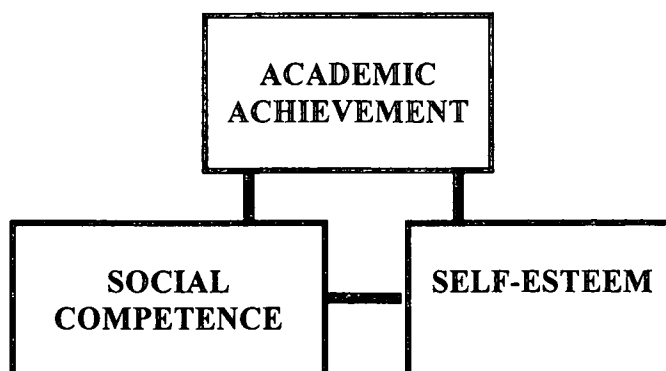
The conclusion that may be drawn from the model depicted in figure 3.4 is that this may be the most accurate depiction of interaction between academic achievement, social competence and self-esteem. The social and intellectual aspects are equally important to the learner's academic achievement (Chen et al, 1997; Hinslaw, 1992). One area where adolescents' social competencies are often tested is in the family. The role of the family with regard to academic achievement will be investigated against this background.

3.2.2 Domestic factors

Adolescents perceive their academic and general competence in relation to themselves and two additional sources of feedback. One of these sources is the peer group. The other is the family. The family fulfils a very important function in adolescents' lives. The family constitutes the primary source of support during childhood and well into adolescence (Crystal et al., 1994). The family also serves to transfer the values of the culture and society to children and adolescents (Taylor et al., 1994). It is thus evident that the family is a powerful socialising force, which exerts a great deal of influence over the child or adolescent. The family also effects how adolescents experience education. According to Marais and Bornman (1989), acceptance not only by the peer group, but also by the family is a prerequisite for successful academic adjustment. Thus, while much has been made of the influence the peer group has on adolescents, it must be remembered that the greater majority of adolescents defer to their parents

concerning important life and career decisions (Crystal et al, 1994). Even though the peer group is important, parents still remain highly influential in adolescents' lives (Nitz et al., 1988). The manner in which families influence adolescents' experiences of education is twofold. Firstly, families offer support and safety. Secondly, families may set certain demands or convey certain values regarding academic achievement.

The role that family support plays will be investigated first. According to Duckett, Raffailli and Richards (1989), early adolescence is a period of transition during which individuals begin to develop an ever increasing sense of autonomy but still remain dependant on their families for guidance and support. The closer the family and the more supportive the family relationships, the better adolescents are able to cope with demands from their environment. In a study of Japanese and American scholars, it was found that the Japanese adolescents reported fewer emotional disturbances than the American adolescents (Crystal et al., 1994). This was in spite of the emphasis Japanese society places on academic achievement. These adolescents seemed to be able to cope with these rigorous academic demands because of the intensive involvement and support of their families (Schneider & Lee, 1990; Steinberg et al., 1992).

Adolescents' domestic lives can also be a source of disruption and emotional distress. The family acts as a mediator between a culture and the young members of that culture. Thus the family introduces adolescents to general cultural values and reinforces these values. Families help adolescents learn what is important in their society, as well as, what success is and what to work for (Nitz et al., 1988). Crystal and his colleagues (1994) found that in the highly competitive and performance-orientated Japanese culture the family placed much emphasis on academic achievement and preparation for future education. Japanese adolescents thus spend the majority of their time involved in academic pursuits, while the American youth spend far more time involved in sport and leisure activities. This is due to the fact that American society, while valueing competition and education, places more emphasis on leisure activities and the enjoyment of life. The result is that these two groups of adolescents experience different types of

stress. The Japanese adolescents experience stress to achieve academically and are often anxious about not achieving the goals set for them (Crystal et al., 1994). American adolescents often experience a feeling of being overwrought and unable to cope. This is due to the fact that they are expected to be competent on a wide variety of levels. They are expected to perform well academically, socially as well as in the sports arena. This conflict of interests takes its toll on these adolescents' emotional wellbeing. There also seems to be a higher degree of domestic instability in America due to the high rate of marital conflict and divorce (Schneider & Lee, 1990). This demonstrates the different types of pressure that families in different cultures can put on adolescents. This pressure is related to adolescents' emotional wellbeing and academic performance. These types of pressure are by no means restricted to the societies mentioned above. South African society is very diverse and as a result the school system is filled with learners who are often striving for very different goals. This can create problems for adolescents, especially when the goals their families encourage them to strive for differ from the goals the education system views as important.

Parents, like the society in which they live, begin to see individuals in a more adult light during adolescence and begin to expect them to take on new responsibilities. Adolescents also begin to become more future and career oriented which opens them to these family expectations (Nitz et al., 1988). The standards parents set for their children are sometimes unrealistic (Hewitt & Flett, 1990). Adolescents often feel they must meet these standards in order to be accepted within the family. The perceived stress and sense of helplessness adolescents experience while attempting to achieve these unrealistic standards may lead to decreased academic performance or even school dropout (Halgin & Leahy, 1989).

As stated earlier, parental conflict also negatively influences adolescents' academic performance. According to Cummings and Davies (1994), exposure to inter-parental conflict is a prevalent source of stress in children's lives. This stress often contributes to the development of various forms of emotional distress. Grych and Fincham (1990) state that the older children are, the more

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they are affected by inter-parental conflict. Consequently, domestic conflict could be a great source of stress for adolescents. Adolescents often try to hypothesise as to why their parents are in conflict and what they can do to help resolve this conflict. They may also be inclined to make attributions as to whether they are, in some way, responsible for the conflict (Kerig, 1998). Concern and self-blame about inter-parental conflict negatively influences adolescents' self-esteem as well as their perceived control over their lives. According to Rossman and Rosenburg (1992), this uncertainty is often generalised to other areas of these individuals' lives. These adolescents feel less in control of their lives and behavioural problems often occur. They often develop low levels of self-esteem and are less likely to engage in behaviours that draw attention to themselves (Hughes, Parkinson & Vargo, 1989). They are less likely to take risks or to ask questions. This has obvious negative implications for their education.

The family and especially parents are in a position to negatively or positively affect adolescents' functioning in a variety of areas. Parents offer support and make demands that profoundly affect the way in which their children deal with challenging situations (Nitz et al., 1988). This is especially significant in the South African context where a high divorce rate and a wide variety of family constellations and living arrangements complicate the domestic situations of many learners.

Education and puberty have been identified as prominent challenges that face young adolescent learners. Since puberty was dealt with in the previous chapter attention will now be focused on the challenges presented by the education system, and specifically during the transition from primary to secondary school.

3.3 THE TRANSITION FROM PRIMARY TO SECONDARY SCHOOL

The transition from primary to secondary school coincides with the early stages of adolescence. The result is that learners often need to deal with intensive physical changes which have just been shown to affect their personal, social, family and consequently

academic functioning. This situation is further complicated by the adjustment these individuals have to make as they move from one educational environment to a very different one. The aim of this section is threefold. Firstly, to orientate the reader in terms of the educational environment in general, as well as various factors that may influence adolescents' experience of this environment. Secondly, to investigate the academic skills emphasised at primary as well as secondary school level and the extent to which discrepancies in terms of these academic skills may further complicate the educational environment. Finally the coping mechanisms employed during this period of transition will be investigated.

3.3.1 The educational environment

The term education system is used to refer to the various elements that constitute the adolescents' formal learning environment. The primary focus of this section will be the education system as a social institution. The relationship of the adolescent to other learners and teachers within the education system is of particular importance. The importance of peers and academic competence to the intra- and interpersonal wellbeing of the adolescent was discussed earlier in the chapter. This section will shed more light on the way the composition of learners' specific educational environments, the effect of the environment on their academic achievement and their attitudes towards these environments.

The way learners perceive the educational environment influences their attitudes to education in general. Very little attention has been given to learners' experiences of education (Pretorius, 1996). However, the current trend in education is to view learners as active participants in their own education and not just as passive recipients of academic material. The perceptions and attitudes of learners are becoming increasingly important within the administration of education (Hellawell, 1992). However, this paradigm shift is still relatively new to South Africa. Consequently, very little relevant literature is available. Therefore, much of this discussion will be based on research from other countries, particularly the United States of America and the United Kingdom. The various educational environments or educational focuses that learners are exposed to will be discussed. The differing experiences with regard to gender and

type of school will also be dealt with.

3.3.1.1 Educational focus

A variety of education options are open to adolescent learners. They can choose from a chiefly general academic education, commercial, technical or agricultural education. Each type of school prepares learners for a career or further education in a specific field. Since the participants in this study were exposed to a general academic education, the discussion will focus specifically on this stream of education.

The type of curriculum presented to learners is important. Learners are affected by the educational institution's hidden curriculum or the philosophy that underlines the education process (Leeds, 1987). Society's values, concerning competition and achievement, are reinforced by the educational institutions within a specific society or culture (Crystal et al., 1994). According to research conducted in Australia, Leeds found that traditional educational institutions tended to have a narrow content oriented focus. Learners were expected to internalise and reproduce the subject material. Very little room was left for individual expression or creativity. These schools also tended to have an authoritarian and competitive philosophy underlying the curriculum. These hierarchical and competitive systems were found to have a negative effect on the learning process. A more democratic philosophy which emphasised learners as individuals and focused less on functions such as competition, tradition and the reputation of the education institution resulted in more positive educational experiences for learners. These positive educational experiences had a positive effect on the learners' motivation and led to reduced drop-out rates.

Leeds (1987) also makes the point that an exclusive and narrow academic focus can be stressful for adolescent learners because of the emphasis placed on examinations, competitiveness and individuals working in isolation. Learners often feel that these educational institutions do not meet their needs. This results in a lack of motivation and a decreased sense of control over their academic careers (Poole, 1990).

3.3.1.2 Gender differences and educational outcomes

The relationship of society to the education system is perhaps most clearly displayed with regard to gender differences. Byrne and Byrne (1990) contend that schools reinforce the stereotypical roles that exist in the greater society. Society in turn reinforces the credibility of the education system in terms of the composition of the job market. The trends that exist in employment are reflected in the curricula of a specific society's educational institutions. Males in the South African job market have tended to hold positions with better salaries and more power than their female counterparts (Barker, 1995). This coincided with an educational trend in which females generally failed to achieve and perform to their full potential, when compared to male learners.

Lee and Bryck (1986) cite under-recruitment of females in mathematical, scientific and financial fields as a problem area. This imbalance in the job market is reflected in the subject choices learners make. Male learners tend to take classes that prepare them for careers in science or finance, while females take classes that prepare them for careers in administration, commerce, catering and related fields (Poole, 1990). There is often a belief that this imbalance in course selection is as a result of differing inherent abilities. Yet Byrne and Byrne (1990) state that no evidence can be found to suggest that differences in mathematical and science performance are a result of biological or neurological factors. However, Lee and Bryck postulate that course material, method of presentation and testing procedures traditionally gave males an advantage over female learners. Teachers were also found to treat males more positively with respect to certain subjects (science/mathematics), while simultaneously being more positive to females with regard to more "female appropriate" subjects.

According to Byrne and Byrne (1990), a definite prejudice exists that reinforces sexual stereotypes. This is particularly evident with regard to subject choices and academic achievement within specific subject areas. These influence learners' prospective career options and aspirations. Thus the educational institutions help teach and reinforce the gender stereotype of the society or culture they serve.

3.3.1.3 School type and educational outcomes

A wide variety of schools exist in South Africa. However, they can all be divided into two specific groups, namely private and public schools (Pretorius, 1996). According to Byrne and Byrne (1990), private schools hold certain advantages for the learners who attend them. The classes are usually very small and more emphasis is put on the teacher-learner relationship. Consequently learners at private schools enjoy a high level of personal attention. This helps the learners cope with the material and increases the chance that any special needs they have will be addressed, while learners in the larger classes of public schools often do not get the same attention from their more overloaded teachers. However, the danger of these smaller schools is that pressure to achieve and participation in a variety of activities may result in conflicting interests that could negatively affect learners' academic achievement.

It would thus seem that many different factors within the educational environment have the potential to influence adolescent learners' experiences of education. The values emphasised by the specific educational institution may differ from the values learners or their families view as important. When these values differ learners are often confused as to what is expected of them. It also seems evident that the experiences of male and female learners differ to an extent. The type of school and the size of the class also seem to play a role. It is thus evident that a wide variety of educational environments are to be found within the education system. This situation is further complicated during the transition from primary to secondary school by puberty and the shift in academic skills that often takes place during this transition. It would thus seem appropriate to discuss the academic skills emphasised at primary and secondary school level, as well as differences that may exist between the two.

3.3.2   Academic skill discrepancies

The primary and secondary school phases differ in many respects. However, the two areas of particular interest within the context of this study are the manner in which the classroom is physically organised and the way in which material is conveyed to the learner. These factors cannot be viewed as independent as they

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both help determine what skills learners employ in order to negotiate the educational environment (Wragg, 1993). For example the number of learners in a class (physical organisation) influences the quality of attention the teacher can give each individual (method of conveying material). Consequently an attempt will be made to investigate these factors in a manner that demonstrates their interdependent relationship.

### 3.3.2.1 The academic skills of primary school

Primary school learners tend to spend much of their time in one classroom. In fact, for the first five years of their education, learners receive practically all their instruction from one teacher in the same classroom (Calitz, 1987). Current educational theory views this scenario as very favourable (Southworth & Lofthouse, 1990). This arrangement is favourable for two reasons. Firstly, learners are in a familiar and consistent environment. This enables them to focus more attention on the learning process and less attention on coping with an unpredictable environment. Secondly, according to Southworth & Lofthouse, teachers have the opportunity to observe learners over an extended period of time and in a variety of situations. This increases the chances of picking up any problems that learners may experience. As a result, the curriculum can often be modified to learners' specific needs. Teachers thus have the opportunity to detect the individual learning styles and other differences that exist in the classroom. They are then better able to structure the education process in order to keep all the learners involved in the learning process (Proctor et al., 1995). Thus slower working learners may receive additional assistance and socially inhibited learners may gradually be drawn into a more active learning process. According to Southworth and Lofthouse, a one class to one teacher ratio should be maintained for as many subjects as possible. Specialist subject teachers should only be employed if the class teacher is not capable of presenting a specific subject or of acquiring a degree of proficiency in doing so.

The early part of primary education thus centres around a single teacher, while the use of multiple instructors becomes more frequent during the later part of the primary education phase (Proctor et al., 1995). However, these specialist subject

teachers often move from class to class thus enabling the learners to remain in a familiar environment. An additional stabilising factor is that these teachers often present related subjects to the learners (Southworth & Lofthouse, 1990). Thus the teacher who presents mathematics may also be responsible for the natural sciences course. This provides more stability than having a separate teacher for each course would. Another positive aspect of this system is that since these teachers teach related subjects (e.g. maths and science) they are still aware of learners' individual differences within the general (science) field. Thus they still have the insight needed to modify the course to the learners' specific needs.

A specific style of learning is also emphasised during the primary school phase. Here teachers are the focal point of the learning process (Proctor et al., 1995). During the primary school phase teachers are responsible for dealing with the vast majority of environment influences that may have an effect on learners' educational experiences. The interaction between the teacher, learner and the primary educational environment is illustrated in Figure 3.5.

Fig 3.5:   **Schematic representation of the educational process during the primary education phase**
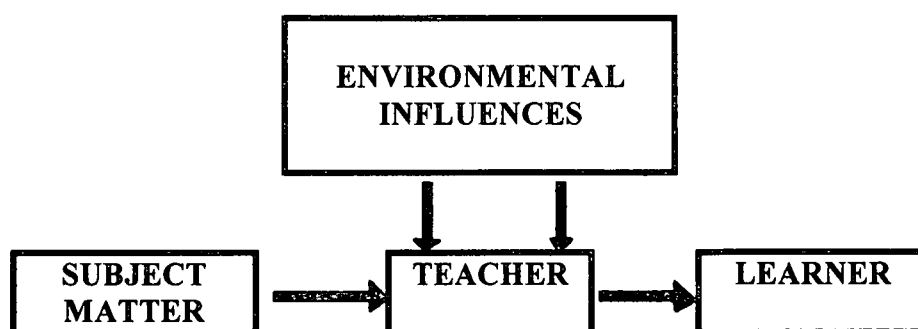
Proctor and her colleagues (1995) identify the following as the most important functions of the primary school educator:

The first is to ensure that the learners understand the material. Teachers should ensure that they start from what the children know and try to link the new information to this existing knowledge. Teachers are thus responsible for providing continuity. They must ensure that the mode of presentation suits the

learners. The material must be broken down into manageable units or tasks.

The second function that teachers fulfil is to reinforce and consolidate the learners' skills. They also have to ensure that the most important aspects of the work are emphasised. Thus teachers decide for the learners what is important and what is not.

The third function is summarising. Teachers need to recap the most important aspects of the work and ensure that learners' levels of understanding are satisfactory. If not, these teachers are responsible for taking action to improve them.

It is thus evident that the primary school provides a very structured and caring environment. Teachers act as mediators between the learners and the influences in the educational system. Learners need to accept very little responsibility for their education. Any environmental changes that occur, especially toward the later part of primary school, take place gradually and allow learners time to adjust to the new situation. This protective environment is, however, not to be found in the secondary school. As mentioned previously, the physical and academic environment of the secondary school differs drastically from that of the environment primary school learners find themselves in. More attention will now be given to the academic skills required for effective adjustment to the secondary school.

3.3.2.2 The academic skills of secondary school

The physical organisation of the secondary school, as well as the teaching methods employed, differ greatly from that of the primary school. During the secondary school phase learners enjoy far less environmental stability than they did in the primary school (Capel et al., 1995). The subject areas become too diverse and complex for one teacher to be able to teach everything. There is greater subject specialisation amongst teachers during the secondary education phase. Consequently, learners often have a different teacher for each subject. Classroom space and other practicalities also make it necessary for adolescent

learners to attend each subject in a different classroom (Wragg, 1993). The most obvious implication of this is that the teachers have fewer opportunities to get to know the learners. This lack of a close personal relationship may make learners feel isolated (Crystal et al., 1994). This situation also makes it difficult for teachers to become aware of learners' specific and unique needs. The volume of work that needs to be covered also makes it impractical to try and modify the class in such a way as to address the needs of each learner. Learners are thus no longer nurtured and protected. They must now assume a more active role in the learning process while the teachers act primarily as facilitators. The learners now have to deal with the stressors on their own from the educational environment and no longer have teachers as mediators.

The interaction between the teacher, learner and secondary educational environment is illustrated in Figure 3.6.

Fig. 3.6:   **Schematic representation of the educational process during the secondary education phase**
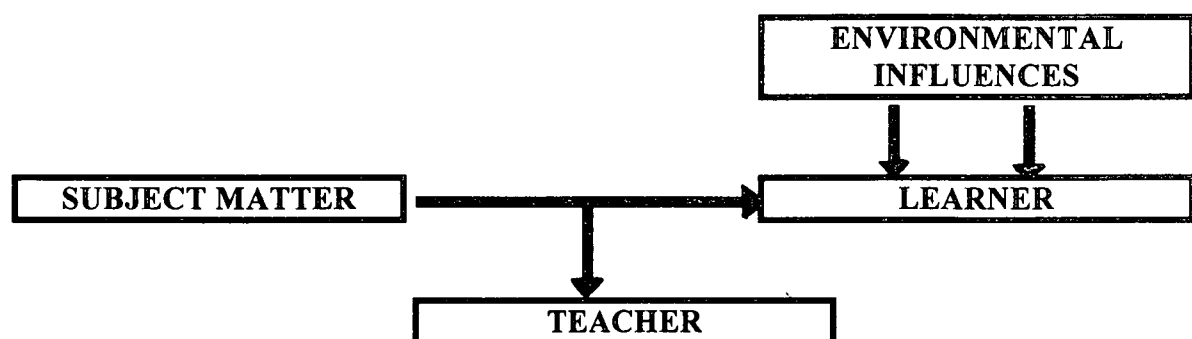
The skills that Capel, Leash and Turner (1995) list as necessary for secondary education differ from those needed during the primary phase. Here the focus is on the adolescent learners as active individuals within the learning process. During the primary phase teachers were responsible for the transfer of information. During the secondary school phase responsibility is shifted to the learners. Learners are expected to be actively responsible for acquiring the relevant knowledge and skills during this phase of their education, while teachers occupy more facilitating roles. According to Capel, Leask and Turner, secondary school

learners are expected to be able to listen to explanations in class, formulate their own ideas of what material is most important, gain an overview of the work, read for meaning, make effective summaries, learn and apply the material as well as be able to give effective feedback during evaluations. It is thus obvious that secondary school learners are expected to be far more independent and academically skilled than their primary school counterparts.

According to Gray, Davis and Poole (1984), adolescent learners value the role of education as preparation for the future, but are often dissatisfied with the way in which their expectations are met by the education system. These learners do not always perceive the school as an inviting physical or social environment. According to Poole (1990), it is most often the educational organisation and teaching structures that are viewed in a negative light. In a study conducted by Leeds (1987) it was found that learners who experienced academic difficulties often offered large classes, an impersonal atmosphere and feelings of alienation as reasons for their poor performance and dissatisfaction. It is thus evident that many learners do not experience the education system as a stable and supportive environment. Learners who viewed the system negatively were also more likely to drop out or struggle to find gainful employment, while learners with a positive attitude towards teachers and the education system tended to continue their studies at tertiary level. Conversely, learners with more negative attitudes towards school often felt that the school focused on the subject matter and not the individual. They also perceived the school's educational focus to be very narrow. These problems are often compounded during the transition from primary to secondary school.

The intense physical, cognitive and emotional development of early adolescence makes this a very taxing time for individuals, while the demands of the educational environment exert additional pressure on young adolescent learners. It is evident that young adolescents are simultaneously exposed to demands from a variety of areas. As a result many young adolescent learners experience difficulty adjusting to secondary school in a greater or lesser degree (Marais, 1987). The problems adolescents experience in the developmental realm and the

difficulties inherent in the educational environment, often make it difficult for young adolescents to make an effective transition to the secondary school.

The transition to secondary school coincides with early adolescents. Consequently, adolescents experience difficulty and uncertainty not only on an academic level, but also in the areas of cognitive, physical and social development. Hirsh and Rapkin (1987) found that adolescent learners often experience a decline in their perceived quality of school life during this period. They find themselves in a complex situation where they are simultaneously struggling to gain peer acceptance and acquire the academic skills necessary to be successful secondary school learners. Consequently, many learners find it difficult to maintain the same level of academic achievement that they had during their primary school careers (Marais, 1986).

Certain differences seem to exist with regard to the skills that learners need to achieve at primary school level and those demanded by secondary school education. Learners often view themselves as unable to meet the demands of the secondary school phase. This is due to the differing focuses of the two educational stages. The primary school phase is characterised by a very supportive learning environment in which teachers provide a lot of support and assistance to learners. The secondary school environment, on the other hand, requires adolescent learners to be largely responsible for their own education. The transition from primary to secondary school thus creates a crisis in terms of learners' academic skills. According to Marais and Bornman (1989), the school system often fails to offer learners enough in the way of security and stimulation. This lack of support often leads to these learners being lost without having the opportunity to fully develop their academic potential. Adolescent learners often do not perform well academically due to a lack of scholastic skills (Jones et al., 1992). In other words, adolescent learners are expected to be able to function effectively in secondary school without having had the opportunity to learn the necessary academic skills. Only a small percentage of learners are able to acquire these skills on their own. The educational system thus expects adolescent learners to be able to function at a certain level of independence without ensuring that

they learn the skills necessary to do so. Consequently, many learners develop resistance to school and learning as a result of the drop in their academic performance and their perceived inability to remedy the situation. This in turn increases their chances of dropping out before they have completed their secondary schooling.

The literature surveyed thus far would seem to suggest that young adolescent learners are exposed to various stressors during the early secondary school phase. Pubertal development has certain implications for these adolescents. They experience massive changes in their physical, cognitive, social and emotional realms (Adams et al, 1994; Craig, 1996; Cummings, 1995; Seltzer, 1989; Steinberg, 1993; Thom, 1991). The peer group and family also exert pressure on adolescents with regard to academic, social and family functioning (Green et al, 1980; Wentzel & Asher, 1995). The education system, in turn, requires adolescents to learn various academic skills and to deal with the challenges of the changing school environment in an independent fashion (Luthar, 1995). It is thus evident that young adolescent learners' academic, domestic and personal worlds are potentially very stressful. The effects of this stress are often reflected in decreased academic achievement during the initial stages of secondary education. However, not all adolescents experience the academic environment in the same way. As already mentioned, some learners experience a great deal of stress during the early secondary school phase, while others seem to make the transition with very little difficulty (Marais & Bornman, 1989). The fact that all individuals do not react to these various life stressors in the same way, would seem to indicate that individual differences exist with regard to their coping or adjustment abilities (Fraser & Tucker, 1997). The degree, to which adolescent learners are able to successfully function during the early secondary school phase, may thus be dependent upon their ability to adjust to their new or changing environment.

3.3.3 Adjustment mechanisms

Certain issues around adolescent adjustment mechanisms used to deal with the transition to secondary school will now be discussed. However, adjustment must first be defined in order to provide a degree of focus for the discussion.

3.3.3.1 Definition of adjustment

Adjustment, like most other psychological processes, can be defined from various points of view. Joubert (1981) offers the following definition of psychological adjustment during early adolescence:

> "Satisfactory adjustment during early adolescence is a dynamic process whereby the adolescent can overcome different developmental problems by means of satisfactory intra- and interpersonal relations with the result that he may be able to satisfy his own needs, comply with the demands of his environment and establish a sense of identity" (p.1).

Feldman (1989) offers a slightly simpler definition of adjustment: Here adjustment is viewed as " the efforts people make to meet the demands and challenges placed upon them by the world." (p.14). Adjustment is thus the process by which adolescents, or any other individuals, employ various cognitive, behavioural or social support strategies in order to effectively deal with new or changing environments. It is thus evident that adjustment mechanisms, often also referred to as coping skills, may include any variety of behavioural, cognitive or emotional strategies that enable individuals to effectively deal with disruptive events or periods in their lives. The specific areas that warrant adjustment during the transition to secondary school will be investigated. Specific attention will be given to both academic and interpersonal adjustment strategies.

3.3.3.2 Areas of adjustment

Most individuals are faced with new and unfamiliar situations on an almost daily basis. Consequently, certain areas of common concern can be identified. Feldman (1989) suggests that the major challenges in any individual's life include maintaining one's individuality in the world, maintaining physical health, maintaining mental health and living with others in a complex world. Young adolescents are faced with these changes in a very real way. They experience changes in vitally important areas of their lives and must adjust in order to be able to function optimally. Young adolescent learners have to struggle to develop relationships with parents and peers, while striving to retain their individuality (Chen et al., 1997; Crystal et al., 1994; Kerig, 1998;). They also have to find

effective ways of dealing with the physical changes they experience (Adams et al., 1994). These are all vital areas of adjustment in adolescent learners' lives and as such, affect their academic achievement to a greater or lesser degree (Chen et al., 1997 ; Graber et al., 1997). However, an attempt to investigate the way in which adolescents cope with every stressor in their environment would be a monumental task. It would also be beyond the scope of this particular research project. The focus of this discussion will thus be on how adolescents deal with the most common and immediate challenges of their secondary school environment, namely maintaining their previous level of academic achievement and adjusting to their new social environment, namely adjusting to their new domestic and peer environments.

Every adolescent's domestic, physical and social situation is different. It would thus be near to impossible to study the specific adjustment or coping strategies of each person in each situation. However, they all have to attend school and attempt to maintain a certain level of academic achievement. The remainder of this discussion will thus focus on how adolescents adjust on the levels of peer interactions and academic achievement. This does not imply that adjustment in other areas is not important. Individuals with fewer coping skills (lower levels of adjustment) are more likely to develop health, psychological and achievement problems than their more well-adjusted counterparts (Elliott & Marmarosh, 1994). This would imply that adolescents struggling to adjust in non-academic areas of their lives would still be inclined to perform poorly at school. However, adolescents' ability to cope with their new educational environment would help them deal more effectively with these external (non-academic) stressors and vice versa. According to Elliot and Marmarosh, adolescents who view themselves as being able to cope effectively in certain areas will be more inclined to apply similar coping strategies to other areas of their lives. This study does not totally discount the role of non-academic factors. The empirical study undertaken later will attempt to determine whether any specific differences exist between adolescents who are able to make a successful transition to secondary school and those who are not, with regard to their general adjustment strategies and general study orientation.

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(A) General study orientation (study habits and attitudes)

Any logical attempt to address academic problems would have to start with the academic skills and strategies employed by individuals. According to Appelgryn (1985), a positive relationship exists between study skills and academic achievement. This would suggest that poor academic achievement could best be addressed by improving study skills. More recently, Slate, Jones and Dawson (1993) view the learners' study skills as an integral part of the learning process and significant to learners' academic achievement, while Schoeman, Schoeman and Esterhuyse (1990) suggest that a relationship may exist between learners' study skills and their adjustment. It is thus evident that study skills and attitudes are instrumental in helping adolescent learners cope with changes in their academic lives and related areas. Study skills and attitudes are thus the most accessible and potentially the most effective adjustment mechanisms during adolescent learners' transition from primary to secondary school.

Research conducted in the United States of America by Slate, Jones and Dawson (1993) found that the vast majority of secondary school learners employ ineffective study skills. These learners also exhibit poor reading comprehension, inappropriate use of study time and ineffective organisational strategies when studying. Leeming (1997) highlights procrastination as another weakness in most learners' study regimes. However, Dickinson and O'Connell (1990) caution that the acquisition of study skills does not necessarily correlate with improvements in academic achievement. They also go on to state that simply increasing study time seems to be ineffective. Learners need to exhibit a commitment to more effective study skills. These study skills and strategies are mechanisms of adjustment that each individual needs to apply independently. This may go a long way towards explaining why not all learners who are exposed to study skills programmes experience the same degree of improvement in their academic achievement. Learners' levels of motivation are closely related to their view of themselves as individuals who are able to cope effectively with their environment. According to MacNair and Elliott (1992) learners who view themselves as being able to cope effectively will be more inclined to use problem-focused coping strategies. These learners will thus be more inclined to exhibit the necessary motivation to

effectively apply their new study skills. This relationship between motivation and effective coping skills can be viewed as cyclic. The more effective learners are at solving their problems the more motivated they become to address other problem areas and less likely they are to engage in avoidance behaviours or to procrastinate.

Adolescent learners with effective study skills will be more inclined to maintain or regain their previous level of academic achievement, while their less skilled counterparts may experience greater difficulties in this regard (Marais & Bornman, 1989). This is of particular importance when seen in the context of the more independent role that adolescent learners are expected to play during the secondary school phase (Gullotta, 1983; Van der Merwe, 1989). Since adolescents are responsible for dealing with the majority of academic stressors in their educational environment during the secondary school phase, they need to possess effective study skills and strategies (Jones et al., 1991). Study skills and strategies may be an effective starting point for adolescents in their attempts to adjust to new challenges. However, individuals do not live in social isolation. Consequently, the strategies used to deal with challenges on a more interpersonal level will also be discussed.

(B) Interpersonal adjustment mechanisms
Adolescents may also experience difficulties within the family or amongst their peers. Chen, Rubin and Li (1997), while not able to prove a causal relationship, found that a relationship did exist between social adjustment and academic achievement. Hinslaw's (1992) research produced similar results. Social adjustment refers to the process by which adolescent learners solve problems in order to satisfy their interpersonal needs (Joubert, 1981). Individuals who exhibit pro-social behaviour and are interpersonally skilled are more likely to achieve highly in academic areas (Masten et al, 1995; Wentzel & Asher, 1995). Thus socially skilled adolescents tend to achieve academically while their less skilled counterparts do not seem to enjoy the same level of success. MacNair and Elliott (1992) suggest that adolescents who see themselves as interpersonally effective tend to be more effective in their approach to academic adjustment and vice

versa.

It is extremely difficult to attempt to investigate the exact strategies used by adolescents to adjust to challenges on a social level (Feldman, 1989). Each adolescent's social and domestic situation is to some extent unique. Each family is different in structure and function. Similarly, the problem solving strategies that are effective for a particular adolescent in a particular family or peer group may not necessarily be effective even for their siblings living in the same family. The premise at work here is that adolescents who are not able to function well in the family or in the peer group will also have difficulty maintaining a satisfactory level of academic achievement during the transition from primary to secondary school. Learners with better social coping skills may also experience a drop in academic performance initially, however, this is often of a more transient nature than the problems of less socially competent learners (Wentzel & Asher, 1995). Adolescents with effective coping abilities tend to experience fewer psychological and health problems than their less effectively adjusted counterparts (Elliot & Marmarosh, 1994). These problems often become worse under highly stressful conditions such as life changes (puberty) and environmental changes (the transition to secondary school). Thus the more effective adolescents are at dealing with domestic and other interpersonal problems, the more likely they are to function effectively on an academic level as well.

3.4 SUMMARY

The literature reviewed suggests that one of the most important tasks of early adolescence is to be an academic success and lay the foundation for further, more career orientated education. A wide variety of factors have been shown to influence academic achievement during early adolescence. The first of these is the physical and cognitive development that occurs during late childhood and early adolescence. These developments affect the way the education system reacts to learners as well as the degree to which these learners are able to take full advantage of the learning opportunities that

are presented to them. The second area of development during adolescence is the emotional realm. The way in which adolescents relate to themselves and others within the educational environment seems to be related to their academic achievement. Theorists differ with regard to the direction of this relationship. However, there seems to be consensus as to the existence of this relationship. The third factor that is thought to play a role is adolescents' home environments. Families introduce learners to the values and norms of their particular culture or society. Different families may thus emphasise different values and consequently influence their children's experiences of the education system in specific and unique ways. It is thus apparent that both the intra- and interpersonal development that takes place during early adolescence influences individuals' educational or academic experiences.

The difference between individuals who are able to continue to function effectively during stressful life events and those who are not, can largely be explained in terms of differing adjustment abilities. Adolescents' problem-solving abilities become increasingly important as they are expected to be more responsible for their own education during the secondary school phase. The better able they are to adjust to the new situation by using effective study and social problem-solving strategies, the sooner they return to an acceptable level of academic achievement. Furthermore, the degree to which they are able to cope with problems in one sphere of life, the more confident they are and the more able they are to solve problems on other levels.

CHAPTER 4
RESEARCH PROCEDURES

4.1 INTRODUCTION AND GOAL

This chapter deals with the research methods and procedures used to try and determine whether any differences exist with respect to the general adjustment (adjustment and general study orientation) of learners who experience an increase in academic achievement during the transition to secondary school and those learners who experience a decrease in academic achievement during the same period. In addition, the effect of gender differences, residential status and language will also be investigated. An exposition will be given of the hypotheses that were formulated, the variables concerned, the measuring instruments used, the composition of the sample and the manner in which the data was collected. Finally, the statistical methods employed in the study will also be discussed.

The preceding literature review seems to suggest that adolescent learners experience a great deal of stress with regard to their pubertal development as well as the challenges that the education system presents them with during the transition from primary to secondary school. Some learners seem to have little trouble maintaining their previous level of achievement during this transition, while others experience great academic difficulty (Marais & Bornman, 1989). It has also been suggested that the learners who are able to maintain their previous levels of academic achievement are able to do so due to superior adjustment abilities (Crystal et al., 1994). Furthermore, Schoeman, Schoeman and Esterhuyse (1990) are of the opinion that a relationship may exist between the study habits and attitudes of secondary school learners and aspects of their adjustment. However, Dickinson and O'Connell (1990) caution against equating adequate study methods with an increase in academic achievement. The world of the adolescent learner is multi-faceted, consequently a variety of factors influence their academic achievement as well as their adjustment. According to Schneider and Lee (1990), as well as Steinberg, Dornbusch and Brown (1992) family support has an influence on the way in which learners adjust to both academic and environmental changes. Consequently, it may be

hypothesised that learners who live at home receive more constant support than learners who live in hostels. This support may play a role in the adjustment process. Byrne and Byrne (1990) are of the opinion that schools are inclined to reinforce the gender stereotypes of a specific culture or society. As a result an attempt will also be made to determine whether any differences exist with respect to the adjustment and changes in academic achievement of male and female learners during the transition from primary to secondary school.

The goal of this study is to determine whether any differences exist with respect to the general adjustment of learners who experience an increase in academic achievement during the transition from primary to secondary school and those learners who experience a decrease in academic achievement during the same period. For the purposes of this study, general study orientation (study habits and attitudes) is considered an important adjustment mechanism for learners (Slate, Jones & Dawson, 1993). The research method used during the course of this investigation will now be discussed.

4.2   RESEARCH METHOD AND DESIGN

4.2.1 Introduction

The term research design refers to the proposed plan according to which data is collected and inferential statistical methods are applied (Huysamen, 1986). The research design used in this ex post facto study is the criterion group design. In this type of research design subjects are drawn from existing populations. These criterion groups are then compared to each other with regard to the dependent variables (Shavelson, 1981). In this specific study grade eight learners are allocated to groups according to changes in their academic achievement, gender, residential status and language. These criterion groups are then compared with regard to their general study orientation and adjustment. These variables can only be studied retrospectively. Consequently, only an interdependent relationship and not a causal relationship can be investigated (Huysamen, 1986).

There is no way of determining all the nuisance variables that may account for

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differences between the criterion groups with regard to the dependent variables. This is due to the fact that the subjects already belong to different levels of the independent variables. Huysamen (1986) suggests that the effect of any nuisance variables be minimised by ensuring that the groups are identical with regard to any nuisance variables that may have an effect on the dependent variable. To this end only learners making the transition from primary (grade seven) to secondary school (grade eight) were included in the sample. Learners repeating grade eight were excluded from the sample in an attempt to eliminate the effect that past experience or knowledge could have on the adolescent's ability to adjust to secondary school. A single year group was used in an attempt to ensure that all the learners in the sample were exposed to a similar educational environment. Finally, standard scores (z-scores) were used to determine changes in academic achievement. This was done so that the percentages from 1997 and 1998 could be compared in spite of the fact that they were achieved in different examinations.

4.2.2 Identification of variables

In any experimental study at least two variables can be identified, namely an independent and a dependent variable (Huysamen, 1986). In ex post facto research designs the research hypotheses investigate the interdependent relationships that may exist between these variables. In this study four independent variables can be identified, namely changes in academic achievement, gender, residential status and language. The two dependent variables in this particular study are study orientation and adjustment. The independent and dependent variables require further exposition.

4.2.2.1 Independent variables

The independent variables are used to allocate subjects into groups. In this particular study the subjects already belonged to one or more criterion groups (academic group membership, gender, residential status and language) before the study began. Since the subjects already belonged to levels or classes of the independent variable, the independent variable is a classification factor. Information regarding the subjects' academic achievement was obtained from the academic records of the relevant schools, while information regarding the

subjects' gender, residential status and language was obtained by means of a biographical questionnaire. The data collection methods used will be discussed in more detail in section 4.4.

4.2.2.2 Dependent variables

Dependent variables are variables that can be measured in some or other way. In criterion group designs these measurements are related to the indirect manipulation of the independent variables (Huysamen, 1986). In this instance the scores the learners achieve on the Interpersonal Relations Questionnaire (IRQ) and the Holtzman-Brown Survey of Study Habits and Attitudes (SSHA) may be related to changes in their academic achievement, gender, residential status and/or language.

4.3   COMPOSITION OF THE SAMPLE

The sample consisted of 137 grade eight learners from four schools in the greater Bloemfontein area. Various schools were initially approached, however, only four were able to accommodate the extensive psychometric testing. All the grade eight learners at these schools were eligible for inclusion in the sample. The learners finally included in the sample had to have made the transition from grade seven to grade eight at the beginning of 1998. This was done to ensure that prior experience did not affect their ability to adjust to the new situation. The four schools used in the study can be described as follows:

- Two English medium, boarding/day schools.
- An English medium, day school.
- An Afrikaans medium, day school.

The composition of the sample with respect to the independent variables may be illustrated as follows:

Table 4.1:   Frequency distribution of the sample (N=137) with respect to the independent variables

INDEPENDENT VARIABLES		F	Percentage
CHANGE IN ACADEMIC ACHIEVEMENT:			
	-Improved	97	70,8
	-Deteriorated	40	29,2
GENDER:	-Male	58	42,3
	-Female	79	57,7
LANGUAGE:	-English	54	39,4
	-Afrikaans	50	36,5
	-Other	33	24,1
RESIDENTIAL STATUS:	-Home	98	71,5
	-Hostel	39	28,5

It is clear from Table 4.1 that the vast majority of the sample experienced an improvement in their academic achievement when compared to the class average for the same period. It is also evident that female learners constitute the majority of the sample. This may have implications in terms of the gender differences concerning adolescent development and academic achievement that were discussed in chapters two and three respectively. There appears to be an even distribution of English and Afrikaans speakers in the sample. The learners classified under other languages (Southern Sotho, Tswana, Xhosa and various Chinese dialects) are a fairly accurate representation of this population within the old model C schools. However, any findings concerning this population of learners can only be generalised within this educational system and do not necessarily apply to non-English and non-Afrikaans speaking learners in the broader educational context. It is important to take two factors into consideration with regard to these learners. Firstly, they do not receive first language instruction, which may complicate their educational environment. Secondly, they constitute the minority within their specific educational environment. This may be problematic with regard to social adjustment. The fact that hostel residents constitute less than one third of the sample is

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also problematic, especially with regard to generalising any findings concerning residential status.

4.4   MEASURING INSTRUMENTS

Various measuring instruments were used to help quantify the four independent and the 16 dependent variables used in this study. A biographical questionnaire, compiled by the researcher, was used to obtain information regarding the learners' gender, language and residential status. Measures of the learners' adjustment were obtained using the Interpersonal Relations Questionnaire (IRQ), while measures of the learners' general study orientation were obtained using the Holtzman-Brown Survey of Study Habits and Attitudes (SSHA). Measures of academic achievement were obtained from the learners' November 1997 and June 1998 report cards. These measuring instruments will now be discussed in more detail.

4.4.1   The biographical questionnaire

The aim of the biographical questionnaire was to obtain information concerning the three independent variables, namely: gender, language and residential status (Appendix 1).

4.4.2   Interpersonal Relations Questionnaire (IRQ)

The scores the learners obtained on the IRQ will serve as measures of their psychological adjustment.

4.4.2.1 Background and goal

The IRQ was compiled and standardised by Joubert in 1980. It may be administered to individuals from grade seven to grade nine. It serves as a measure of their personal, home, social and formal relations (Joubert, 1981). According to Joubert, the various aspects of early adolescent adjustment can be logically and systematically arranged according to these four fields. Thus it provides a method to quantify differences in interpersonal relations, and consequently, psychological adjustment during early adolescence. The IRQ can

also be used to screen individuals for adjustment problems. These all serve as reasons for the inclusion of the IRQ as a measuring instrument in this particular study.

4.4.2.2 Description

The questionnaire consists of 260 items that measure 12 components of psychological adjustment. These 12 components of psychological adjustment can be divided into the four primary areas of adjustment. A lie scale is also included to give an indication of how honest the testees' responses are (Joubert, 1981). The primary areas and sub-components of adjustment as measured by the IRQ are as follows:

(A) Personal relations

This field refers to the intrapersonal relations that are of primary importance to psychological adjustment.

Component 1: Self-confidence

The confidence individuals have that they will succeed in tasks they undertake and be satisfied with the results they obtain.

Component 2: Self-esteem

The degree to which individuals accept themselves, feel that they can live up to their personal standards as well as the norms of society, the congruence between self-expectations and the expectations of others and the degree to which they feel they compare favourably to their peers.

Component 3: Self-control

The degree to which adolescents are able to control their emotions and impulses and steer them in socially acceptable directions.

Component 4: Nervousness

The degree to which tension present in the behaviour of individuals as revealed by anxious, aimless and compulsive actions as well as obsessive thoughts gives

an indication of their emotional state.

Component 5: Health

The extent to which individuals are able to enjoy work and life effectively gives an indication of the way in which they regard their bodies and their abilities to make full use of them.

(B) Home relations

This field addresses domestic and family relations that are of primary importance to psychological adjustment.

Component 6: Family influences

The satisfaction that adolescents express regarding their parents, families and socio-economic conditions, gives an indication of the effect they perceive their families to have upon them.

Component 7: Personal freedom

This scale gives an indication of the degree to which adolescents feel that they are free and not restricted by older people. This includes the extent to which these people respect the adolescents' capabilities to manage their own lives and solve their own problems.

(C) Social relations

This field refers to the inter-personal relations, at the peer level, that are of primary importance to psychological adjustment.

Component 8: Sociability in general (Sociability A)

The extent to which adolescents are able to take part in group activities can be assessed by their readiness to make friends, show empathy towards others, their readiness to be interested in the activities of their peers and their readiness to communicate effectively with others.

Component 9: Social relations with members of the opposite sex (Sociability T)

The extent to which adolescents are able to take part in social activities with members of the opposite sex can be assessed by their ability to make overtures to a specific peer of the opposite sex and to accept overtures from a specific peer of the opposite sex.

Component 10: Social relations with members of the same sex (Sociability D)

The extent to which adolescents are able to take part in social activities with members of the same sex can be assessed by their ability to make friends with same sex individuals on an individual level as well as in group context.

(D) Formal relations

This field refers to the inter-personal relations, at a formal level, that are of primary importance to psychological adjustment.

Component 11: Moral sense

Adolescents' moral sense can be inferred from the degree to which they are sure that they are acting in accordance with the norms of society, the efforts they make to avoid conflict with society and the degree of guilt they are subjected to if they act against the rules of society.

Component 12: Formal relations

The extent to which adolescents are able to trust important people in their lives, form satisfactory relationships with supervisors in the learning situation and draw happiness from relationships with teachers and friends at school gives an indication of their ability to take part in formal relations.

Component 13: The lie scale

Socially acceptable responses will rarely be justified and thus a high score on this scale indicates that the scores on the other scales are questionable and that the testees may have been dishonest.

4.4.2.3 Reliability and validity

The reliability of the IRQ scales were estimated by the Kuder-Richardson-20 Formula as adapted by Ferguson (Joubert, 1981). None of the test-retest coefficients were lower than 0,67 for grade eight boys and 0,71 for grade eight girls. Consequently, the questionnaire may be considered to be reliable.

According to Joubert (1980), investigations concerning the experimental, factorial, convergent and discrimination validity of the IRQ scales provided indications that the questionnaire as a whole may be considered to have construct validity. However, she goes on to say that this report on the questionnaire's construct validity cannot be regarded as conclusive and that further studies in this regard are necessary.

4.4.3 Holtzman-Brown Survey of Study Habits and Attitudes (SSHA)

The scores obtained by the learners on the Survey of Study Habits and Attitudes (SSHA) will serve as measures of general study orientation (study habits and attitudes).

4.4.3.1 Background and goal

The SSHA was adapted from the American SSHA (Brown & Holtzman, 1964) and standardised in South Africa in 1974. The questionnaire attempts to determine why certain learners with high academic aptitudes do poorly at school while some of their less academically able counterparts do far better than expected. It is meant to help evaluate the study methods, motivation for study and specific attitudes with regard to academic activities that prove important in the classroom (Du Toit, 1981). The goals of the questionnaire are to identify learners with effective study habits and attitudes, to contribute to a better understanding of learners with learning problems and to help lay a basis according to which such learners can be helped to improve their study habits and attitudes. The questionnaire is standardised for grade eight to grade twelve learners. According to Du Toit, research has shown that the SSHA is a fairly accurate predictor of academic achievement.

4.4.3.2 Description

The questionnaire consists of 100 items that measure the testee's study orientation, study habits and study attitudes. The study orientation score is the sum of the study habits score and the study attitudes score. The study habits score, in turn, is the sum of the delay avoidance and work methods scales. The study attitude scale is the sum of the teacher approval and education acceptance scales. A short description of the SSHA scales follows:

(A) Delay avoidance

This scale gives an indication to what extent learners punctually complete their academic tasks, avoid delaying projects and engage in other forms of time wasting.

(B) Work methods

This scale indicates to what extent learners make use of effective study methods, their proficiency in the completion of tasks and the effectivity of their approach to their academic tasks.

(C) Study methods

This scale combines the scores of the first two scales to give an indication of the testees' academic behaviour.

(D) Teacher approval

This scale gives an indication of the extent to which learners approve of their teachers and approve of these teachers' behaviour in the classroom.

(E) Education acceptance

This scale indicates the extent to which learners accept the ideals, goals, practices and demands of their education system.

(F) Study attitudes

This scale combines the score for the previous two scales in order to give an indication of the trust the testees have in their education system.

(G) Study orientation

This scale combines the study habits and study attitude scores in order to give an indication of the testees' study habits and attitudes.

4.4.3.3 Reliability and validity

The reliability of the SSHA was determined using both the split half and test-retest methods. None of the split half coefficients for the four sub-scales were below 0,805. None of the test-retest coefficients for all seven scales were below 0,856 for boys and 0,811 for girls (Du Toit, 1981). No mention is made of the questionnaire's validity.

4.4.4 November 1997 and June 1998 examinations

The November 1997 (grade seven) and June 1998 (grade eight) examination percentages were employed as measures of academic achievement for each learner during the transition from primary to secondary school. The learners' aggregate percentages for these examinations were obtained. The class averages for the respective examinations were also obtained. The standard scores (z-scores) for each learner's mark in the respective examinations were then calculated. This particular method was used because not all the learners wrote the same examinations. Thus their percentages could not be compared to one another nor could they be compared to a common mean (Huysamen, 1990). However, the z-scores give an indication of each learner's percentage for an examination in relation to the average of that specific examination. Consequently, they could be divided into groups and the changes in their group membership could be used to determine whether any changes occurred in their academic achievement, regardless of the fact that many of them wrote different examinations.

The lowest negative value was then added to all the z-scores so as to simplify calculations by converting all the z-scores to positive values. The first set of z-scores (1997) was then subtracted from the second set of z-scores (1998). The learners were then divided into two groups. The first group consisted of learners with a positive difference between the z-scores (improved academic

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achievement), while the second group consisted of learners with a negative difference between the z-scores (decreased academic achievement). Changes in academic achievement were thus determined in terms of whether learners' academic achievement improved or deteriorated over the course of the two examinations.

4.5 HYPOTHESES

In view of the literature survey, the following research hypotheses were formulated:

Research hypothesis 1

There is a difference in the general study orientation and adjustment of those learners whose academic achievement improved and of those whose academic achievement deteriorated from primary to secondary school.

This hypothesis can be statistically formulated as follows:

$H_0 : \mu_1 = \mu_2$

$H_1 : \mu_1 \neq \mu_2$

Where μ_1 refers to the mean scores of general study orientation and adjustment amongst the population of learners with a negative difference between z-scores, while μ_2 refers to the mean scores of general study orientation and adjustment amongst the population of learners with a positive difference between z-scores.

Research hypothesis 2

There is a difference between the general study orientation and adjustment of male and female learners during the transition from primary to secondary school.

This hypothesis can statistically be formulated as follows:

$H_0 : \mu_1 = \mu_2$

$H_1 : \mu_1 \neq \mu_2$

Where μ_1 refers to the mean general study orientation and adjustment scores for the population of male learners and μ_2 refers to the mean general study orientation and adjustment scores for the population of female learners.

Research hypothesis 3

There is a difference between the general study orientation and adjustment of learners who live at home and learners who board during the transition from primary to secondary school.

This hypothesis may be statistically formulated as follows:

$H_0 : \mu_1 = \mu_2$

$H_1 : \mu_1 \neq \mu_2$

Where μ_1 refers to the mean scores of general study orientation and adjustment for the population of learners who live at home and μ_2 to the mean scores of general study orientation and adjustment for the population of boarders.

Research hypothesis 4

There is a difference between the general study orientation and adjustment of learners who have English, Afrikaans or another language as their first language during the transition from primary to secondary school.

This hypothesis may be statistically formulated as follows:

$H_0 : \mu_1 = \mu_2 = \mu_3$

$H_1 : \mu_1 \neq \mu_2 \neq \mu_3$

Where μ_1 refers to the mean general study orientation and adjustment scores for the population of learners who speak English and μ_2 refers to the mean study orientation and adjustment scores of the population of learners who speak Afrikaans, while μ_3 refers to the mean general study orientation and adjustment scores of the population of learners who speak another language.

No hypotheses were formulated with regard to the interactions that may exist between the main effects. However, the interactions between changes in

academic achievement and the other main effects (gender, language and residential status) were also investigated.

4.6   STATISTICAL PROCEDURES

The questionnaires were administered to the learners early in the first term of grade eight (1998) by honours students in psychology completing their psychometric training. The completed questionnaires were scored by the same psychometrists.

A multivariate analysis of variance (MANOVA) was employed in the statistical interpretation of the data. According to Bray and Maxwell (1985), a MANOVA is performed when two or more dependant variables are used in the analysis. A MANOVA is thus useful in assessing the differences in the means of more than one dependant variable, as well as interactions between the independent variables. The MANOVA also makes it possible to study the relationships between various variables instead of only studying these variables in isolation (Tabachnick & Fidell, 1989). The MANOVA is also sensitive to the direction and the strength of the correlation between the dependant variables. The MANOVA also prevents a Type 1 error-rate from escalating.

CHAPTER 5
RESULTS, INTERPRETATIONS AND RECOMMENDATIONS

5.1   INTRODUCTION

A discussion of the quantitative results as they pertain to the statistical hypotheses will be discussed in this chapter. The conclusions drawn from this data will also be discussed. Finally certain recommendations will be made with respect to further research on this topic.

5.2   RESULTS

5.2.1   Introduction

A MANOVA was performed in an attempt to determine whether differences exist between learners who experience positive changes in academic achievement and learners who experience negative changes in academic achievement during the transition to secondary school with respect to their mean adjustment and general study orientation (study habits and attitudes) scores. The effects of gender, language and residential status on adjustment and general study orientation during this transitional period were also investigated. An ANOVA was then used to determine for which dependent variables significant differences exist. Once these dependent variables were identified it became necessary to determine the direction of the differences. In the case of independent variables with only two levels (changes in academic achievement, gender and residential status) the means for the specific dependent variables were used to determine the direction of the differences. In the case of language where the independent variable had three levels a post hoc t-test (Scheffé) was used to determine which of the language groups differed from one another. The means for the specific dependent variables were then used to determine the direction of the differences. As this study focuses primarily on the changes that occur with respect to adolescents' academic achievement during the transition to secondary school, the interactions

between changes in academic achievement and each of the other main effects was also investigated. Before the research hypotheses formulated in chapter four can be statistically investigated, it is necessary to note the means and standard deviations with respect to the dependent variables for the group as a whole.

Table 5.1:   Means and standard deviations with respect to the dependent variables for the population of grade eight learners (N=137)

Variable	$\overline{X}$	s
Self-confidence (IRQ 1)	37.022	6.742
Self-esteem (IRQ 2)	34.964	6.970
Self-control (IRQ 3)	33.226	6.966
Nervousness (IRQ 4)	31.970	7.136
Health (IRQ 5)	36.540	7.116
Family influence (IRQ 6)	42.007	10.846
Personal freedom (IRQ 7)	36.620	7.787
Sociability A (IRQ 8)	40.080	7.290
Sociability T (IRQ 9)	37.139	10.063
Sociability D (IRQ 10)	39.365	7.265
Moral sense (IRQ 11)	36.737	7.399
Formal relations (IRQ 12)	34.401	7.829
Lie scale (IRQ 13)	30.007	5.517
Delay avoidance (DA)	20.102	8.400
Work methods (WM)	20.978	8.706
Teacher approval (TA)	19.832	9.045
Education acceptance (EA)	22.219	7.771

The abbreviations used in Table 5.1 for the IRQ and SSHA sub-scales will be used in the discussion to refer to these sub-scales in the interests of brevity. The means for each questionnaire will be discussed as a general orientation before the statistical hypotheses are investigated. It is evident from Table 5.1 that IRQ 6, IRQ 8 and IRQ 10 have the highest means for this particular questionnaire in the sample. This would suggest that the sample in general experience a greater degree of satisfaction with their family, general

and same sex social relationships than they do with other areas of their lives. The SSHA means do not seem to exhibit any large fluctuations. This seems to indicate that no specific study attitude or habit stands out from the rest with respect to this sample. Finally, the IRQ 13 scale is meant to determine the validity of testees' responses. Consequently, it will be used to determine the validity of the sample's responses, but will not be taken into account during any further discussions on the results. The mean for this scale, as reported in table 5.1, corresponds with a stanine of six when compared with the norms for both the populations of grade eight boys and girls. This stanine, while not ideal, is still within the average range for this population. Thus the responses reported in this study can be accepted as fairly reliable.

5.2.2 Investigation of the hypotheses

A MANOVA was performed in order to determine whether differences exist with respect to the mean adjustment and general study orientation scores of learners who experience an increase in academic achievement and who experience a decrease in academic achievement during the transition from primary to secondary school. The effects of gender, language and residential status on adjustment and study orientation were also investigated. The interaction of academic achievement and each of the other independent variables were also investigated. The SAS programme (SAS Institute, 1985) was used to perform these statistical procedures. The results of the MANOVA are reported in Table 5.2.

Table 5.2: MANOVA F-values for the test for main effects and interactions.

Source	Number of sub-populations	+F-values	Degrees of freedom	p-value
Gender	2	3.9425	16; 112	0.0001**
Language	3	1.6309	32; 222	0.0226*
Residential status	2	1.4159	16; 112	0.1469
Changes in academic achievement	2	0.7577	16; 112	0.7291
Gender * Changes in academic achievement	4	0.7453	16; 112	0.7422
Language * Change in academic achievement	6	1.5808	32; 222	0.0306*
Residential status * Changes in academic achievement	4	1.0422	16; 112	0.4191

+ F-approach to the Hotelling-Lawley trace.

** $p \leq 0.01$

* $p \leq 0.05$

It is evident from Table 5.2 that differences in the dependent variables (adjustment and general study orientation) occur with respect to two of the main effects, namely gender and language, and for the interaction between language and changes in academic achievement. The differences pertaining to language as well as the interaction between language and changes in academic achievement are significant on the 5% level, while the differences pertaining to gender are significant on the 1% level. The hypotheses formulated in chapter four will now be investigated with regard to the results reported in Table 5.2.

5.2.2.1 Hypothesis 1

The results reported in Table 5.2 suggest that no significant difference exists between the mean adjustment and general study orientation scores of learners who experience an increase in academic achievement during the transition from

primary to secondary school and learners who experience a decrease in academic achievement during the same period. Consequently, the first null hypothesis formulated in chapter four is retained.

5.2.2.2 Hypothesis 2

The mean adjustment and general study orientation scores of male and female learners, during the transition to secondary school, differ on the 1% significance level. Consequently, the second null hypothesis formulated in chapter four is rejected. Now that it is evident that differences exist with regard to the adjustment and general study orientation of male and female learners during the transition from primary to secondary school, it becomes necessary to determine the nature of these differences. To this end an analysis of variance (ANOVA) was performed. The results of the ANOVA appear in Table 5.3.

Table 5.3:   Analysis of variance with gender as independent variable

Dependent variable	N	F-value	Degrees of freedom	p-value
IRQ 1	137	0.68	1	0.4107
IRQ 2	137	0.09	1	0.7707
IRQ 3	137	0.00	1	0.9591
IRQ 4	137	6.47	1	0.0122*
IRQ 5	137	2.93	1	0.0893
IRQ 6	137	0.09	1	0.7599
IRQ 7	137	0.05	1	0.8227
IRQ 8	137	9.82	1	0.0021**
IRQ 9	137	0.10	1	0.7472
IRQ 10	137	20.01	1	0.0001**
IRQ 11	137	16.58	1	0.0001**
IRQ 12	137	3.56	1	0.0616
DA	137	18.10	1	0.0001**
WM	137	21.25	1	0.0001**
TA	137	8.42	1	0.0044**
EA	137	13.10	1	0.0044**

** $P \leq 0.01$

* $P \leq 0.05$

It is evident from Table 5.3 that male and female learners making the transition from primary to secondary school differ with regard to four of the 12 IRQ sub-scales and all four of the SSHA sub-scales. They differ with regard to nervousness (IRQ 4) on the 5% significance level, while the differences regarding Sociability A (IRQ 8), Sociability D (IRQ 10) and Moral sense (IRQ 11) are significant on the 1% level. The differences regarding the Delay Avoidance (DA), Work Methods (WM), Teacher Approval (TA) and Education Acceptance (EA) are all on the 1% significance level. Having identified the

specific dependent variables with regard to which the differences seem to occur as well as their intensity, it becomes necessary to determine the direction of these differences. In order to do this, the means and standard deviations for males and females with regard to the specific dependent variables that appear in Table 5.4 need to be investigated.

Table 5.4:   **Mean scores of male and female learners on significant sub-scales of the IRQ and SSHA**

Dependent variable	Male			Female		
	N	$\overline{X}$	s	N	$\overline{X}$	s
IRQ 4	58	33.724	6.01	79	30.684	7.65
IRQ 8	58	37.879	6.42	79	41.696	7.50
IRQ 10	58	36.310	7.57	79	41.608	6.18
IRQ 11	58	33.862	6.85	79	38.848	7.10
DA	58	16.828	7.37	79	22.506	8.34
WM	58	17.310	7.71	79	23.671	8.45
TA	58	17.345	8.75	79	21.658	8.87
EA	58	19.569	7.70	79	24.165	7.27

The following interpretations may be made from Table 5.4 with regard to the differences in male and female *adjustment* during the transition from primary to secondary school:

- Female learners seem to experience a higher degree of nervousness (IRQ 4) than their male counterparts during the transition from primary to secondary school. Female learners seem more inclined to engage in anxious behaviour than their male counterparts. These compulsive, anxious or aimless tendencies (Joubert, 1981) suggest that female learners are more overly emotional and anxious than male learners are during the same period.

- Female learners seem to exhibit superior social skills (IRQ 8) during the

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transition to secondary school. They appear better able to make friends, take an interest in the activities of their peers, show empathy toward other people and effectively communicate with others than their masculine counterparts.

- Female learners also seem better able to socialise effectively with members of the same sex (IRQ 10) than males are during this period of their lives. They seem better able to make friends with a specific individual or group of individuals of the same sex than their masculine peers are.

- It would also seem that female learners' moral sense (IRQ 11) is better developed than that of their male counterparts. This would suggest that they are better able to avoid conflict with society. Female learners also seem more inclined to act in accordance with the norms of society. They may also experience a greater degree of guilt when they contravene social norms than is the case with male learners.

The following interpretations may be made from Table 5.4 with regard to the differences in the *general study orientation* of male and female learners during the transition from primary to secondary school:

- Male learners are more inclined to waste time, delay academic tasks and procrastinate (DA) than female learners during the transition from primary to secondary school.

- Female learners are more inclined to make use of effective study and work methods (WM) than their masculine peers.

- Female learners tend to be more positive than male learners in their attitudes towards teachers' classroom methods and behaviour (TA).

- Female learners seem more inclined to accept the ideals, objectives, practices and requirements of their particular educational environment (EA) than male learners.

5.2.2.3 Hypothesis 3

It is evident from Table 5.2 that the mean adjustment and general study orientation scores of English, Afrikaans and other language speakers differ during the transition from primary to secondary school. These differences are significant

on the 5% level. Consequently, the third null hypothesis formulated in chapter four is rejected. Now that it is evident that differences exist with regard to the adjustment and general study orientation of learners based on their language group during the transition from primary to secondary school, it becomes necessary to determine the nature of these differences. To this end an analysis of variance (ANOVA) was performed. The ANOVA results pertaining to the main effect language appear in Table 5.5

Table 5.5:   **Analysis of variance with language as independent variable**

Dependent variable	N	F-value	Degrees of freedom	p-value
IRQ 1	137	0.22	2	0.8025
IRQ 2	137	0.26	2	0.7707
IRQ 3	137	0.16	2	0.8543
IRQ 4	137	0.75	2	0.4752
IRQ 5	137	3.84	2	0.0240*
IRQ 6	137	2.00	2	0.1393
IRQ 7	137	3.28	2	0.0407*
IRQ 8	137	1.42	2	0.2469
IRQ 9	137	1.88	2	0.1569
IRQ 10	137	0.83	2	0.4384
IRQ 11	137	0.16	2	0.8534
IRQ 12	137	2.71	2	0.0705
DA	137	1.51	2	0.2238
WM	137	0.58	2	0.5612
TA	137	1.56	2	0.2143
EA	137	0.88	2	0.4168

* $p \leq 0.05$

It is evident from Table 5.5 that English, Afrikaans and other language speakers

making the transition from primary to secondary school only differ with regard to two of the IRQ sub-scales. They differ with regard to health (IRQ 5) and personal freedom (IRQ 7). The differences between the groups on both sub-scales are significant on the 5% level. Having determined the specific dependent variables as well as their intensity, it becomes necessary to determine which groups differ from one another with regard to the specific dependent variables. In order to do this a post hoc t-test needed to be performed. The Scheffé procedure was used. The Scheffé procedure was selected due to the fact that it is a very conservative test (Howell, 1995). Consequently, any significant differences found between the levels of the independent variable with regard to the dependent variable are considered to be valid. Thus the means of the levels of the independent variables will only be compared with respect to the dependent variables shown to have a significant F-value. The results of the Scheffé procedure are reported in Table 5.6.

Table 5.6:   Scheffé results pertaining to significant differences in the mean adjustment scores obtained on IRQ 5 and IRQ 7 by English, Afrikaans and other language speakers

Dependent variable	English			Afrikaans			Other		
	N	$\overline{X}$	s	N	$\overline{X}$	s	N	$\overline{X}$	s
IRQ 5	54	38.074	6.52	50	36.40	7.09	33	34.242	7.64
IRQ 7	54	38.667	6.77	50	35.34	8.77	33	35.212	7.23

According to the Scheffé procedure significant differences exist between the language groups with respect to the means for IRQ 5 (Health). The procedure indicated no significant differences on the 1% significance level with regard to IRQ 7. This apparent contradiction may be ascribed to the strict control that is maintained by the Scheffé procedure. However, according to Ferns (1991), it can still be assumed that significant differences exist with respect to certain mean scores not shown to be significant by the Scheffé procedure. Consequently, the

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mean scores for IRQ 7 will also be dealt with in this study. The results as they pertain to these two dependent variables will now be dealt with separately.

- IRQ 5: The results obtained by means of the Scheffé procedure show that the mean for the English group is significantly higher than the mean for the Other group with respect to IRQ 5. This would seem to suggest that English speaking learners are more inclined to believe in their physical capabilities and be satisfied with their bodies than the Southern Sotho, Xhosa, Tswana and Chinese speaking learners. As a result the English speaking learners are more inclined to enjoy their lives and work in an effective manner than their Southern Sotho, Xhosa, Tswana and Chinese speaking counterparts.

- IRQ 7: Differences seem to exist between the mean of the English group and the means of both the other two groups with regard to IRQ 7 (Personal freedom). There seems to be no significant difference between the Afrikaans and Other group with regard to this variable. The mean for the English group is higher than the means of the other two groups. This would seem to suggest that English speaking learners feel that they have a greater opportunity to be fairly independent and free to pursue their own goals than the Afrikaans, Southern Sotho, Xhosa, Tswana and Chinese speaking learners do.

5.2.2.4 Hypothesis 4

The results reported in Table 5.2 suggest that no significant differences exist between the mean adjustment and general study orientation scores of learners who live at home and learners who live in hostels during the transition from primary to secondary school. Consequently, the fourth null hypothesis formulated in chapter four is retained.

5.2.2.5 Interactions

Only the interaction between language and changes in academic achievement was proved to be statistically significant (Table 5.2). It was significant on the 5% level. This would tend to suggest that changes in learners' academic achievement could be related to the language they speak. It now becomes necessary to determine the nature of these differences. To this end an analysis of variance

(ANOVA) was performed. The results of the ANOVA are reported in Table 5.7.

Table 5.7: **Analysis of variance for the interaction between changes in academic achievement and language**

Dependent variable	N	F-value	Degrees of freedom	p-value
IRQ 1	137	1.00	5	0.4209
IRQ 2	137	0.40	5	0.8496
IRQ 3	137	0.25	5	0.9375
IRQ 4	137	0.68	5	0.6413
IRQ 5	137	2.65	5	0.0225*
IRQ 6	137	2.49	5	0.0342*
IRQ 7	137	2.29	5	0.0499*
IRQ 8	137	1.62	5	0.1589
IRQ 9	137	0.79	5	0.5581
IRQ 10	137	0.92	5	0.4728
IRQ 11	137	1.07	5	0.3777
IRQ 12	137	1.49	5	0.1969
DA	137	2.57	5	0.0296*
WM	137	3.00	5	0.0135*
TA	137	1.90	5	0.0988
EA	137	2.66	5	0.0253*

* $p \leq 0.05$

It is evident from Table 5.7 that the interactions between changes in academic achievement and language are significant on the 5% level with respect to the following dependent variables: IRQ 5, IRQ 6, IRQ 7, DA, WM and EA.

Having identified the dependent variables with respect to which interactions between changes in academic achievement and language occur, as well as their intensity, it becomes necessary to determine which groups differ from one

another with regard to the specific dependent variables. In order to do this a post hoc t-test

needed to be performed. The Scheffé procedure was used. The following six groups were created:

- Group 1: English speakers whose academic achievement deteriorated from 1997 to 1998.

- Group 2: English speakers whose academic achievement improved from 1997 to 1998.

- Group 3: Afrikaans speakers whose academic achievement deteriorated from 1997 to 1998.

- Group 4: Afrikaans speakers whose academic achievement improved from 1997 to 1998.

- Group 5: Other language speakers whose academic achievement deteriorated from 1997 to 1998.

- Group 6: Other language speakers whose academic achievement improved from 1997 to 1998.

The Scheffé results for these six groups with respect to each of the significant dependent variables appear in Tables 5.8 to 5.13.

Table 5.8:   **Scheffé results for the interaction between changes in academic achievement and language with respect to IRQ 5**

Group	N	$\bar{X}$	s
Group 1	18	39.944	5.9058*
Group 2	36	37.138	6.6939
Group 3	9	36.555	7.2820
Group 4	41	36.366	7.1335
Group 5	13	30.923	6.4995*
Group 6	20	36.400	7.6942

According to the Scheffé procedure, the mean of group 1 is significantly higher

(on the 5% level) than the mean of group 5 with respect to IRQ5. This would seem to suggest English learners who experience a decrease in academic achievement are more inclined to believe in their physical capabilities and enjoy life than Southern Sotho, Xhosa, Tswana and Chinese learners who experience decreases in academic achievement. According to the Scheffé results, these were the only two groups that differed significantly with regard to this variable.

However, as mentioned earlier, it can be assumed that significant differences exist with respect to certain mean scores not shown to be significant by the Scheffé procedure. It should also be noted that the size of the sample caused some of the cells to be very small. This would have affected the validity of the findings and should be considered during the interpretation of the data. With these two points in mind, the means reported in the other tables will be investigated to establish whether any general tendencies seem to exist with regard to the interaction between academic achievement and language.

Table 5.9: **Scheffé results for the interaction between changes in academic achievement and language with respect to IRQ 6**

Group	N	$\overline{X}$	s
Group 1	18	44.611	9.5741
Group 2	36	43.472	12.2649
Group 3	9	45.333	8.2310
Group 4	41	40.926	10.2235
Group 5	13	33.230	11.3809
Group 6	20	43.450	8.9057

It appears from Table 5.9 that the mean for group 5 is lower than the means of the other groups with regard to IRQ 6 especially when compared to group 3. This would suggest that the Southern Sotho, Xhosa, Tswana and Chinese speaking learners who experienced a decrease in academic achievement between the two examinations, were inclined to perceive their families and socio-economic

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situations in a more negative manner than the rest of the sample were, especially the Afrikaans learners that experienced a decrease in their academic achievement.

Table 5.10: **Scheffé results for the interaction between changes in academic achievement and language with respect to IRQ 7**

Group	N	X̄	s
Group 1	18	40.833	7.5479
Group 2	36	37.583	6.1754
Group 3	9	38.777	7.2072
Group 4	41	34.585	8.9777
Group 5	13	34.000	6.3246
Group 6	20	36.000	7.8204

Table 5.10 would seem to suggest that the mean for group 1 is higher than the means of the rest of the groups with respect to IRQ 7 especially when compared to group 5. This may indicate that English speaking learners who experienced a decrease in their academic achievement between the two examinations were more inclined to perceive themselves as having an acceptable degree of personal freedom than the rest of the sample were, especially the Other language learners who experienced a decrease in their academic achievement.

Table 5.11: Scheffé results for the interaction between changes in academic achievement and language with respect to DA

Group	N	$\overline{X}$	s
Group 1	18	20.056	9.4151
Group 2	36	17.611	7.8859
Group 3	9	22.444	9.9638
Group 4	41	21.439	8.4204
Group 5	13	15.692	6.6631
Group 6	20	23.700	6.8526

It appears from Table 5.11 that the mean for group 6 is higher than the means for the other groups with regard to DA especially when compared to group 5. This would suggest that the Southern Sotho, Xhosa, Tswana and Chinese speaking learners who experienced an increase in academic achievement were more inclined to begin their assignments promptly and be less inclined to waste time unnecessarily than the rest of the sample were, especially the Southern Sotho, Xhosa, Tswana and Chinese speaking learners who experienced a decrease in their academic achievement.

Table 5.12: Scheffé results for the interaction between changes in academic achievement and language with respect to WM

Group	N	$\overline{X}$	s
Group 1	18	21.944	8.2709
Group 2	36	18.472	8.0834
Group 3	9	21.666	9.1788
Group 4	41	21.415	8.9134
Group 5	13	16.615	8.1296
Group 6	20	26.250	7.7993

Table 5.12 suggests that the mean for group 6 is higher than the means for the other groups with respect to WM. The mean for group 6 seems to be much higher

than the mean for group 5 in particular. These results may suggest that the Southern Sotho, Xhosa, Tswana and Chinese speaking learners who experienced an increase in academic achievement between the two examinations were more inclined to employ effective study strategies and methods than the rest of the sample were. In addition, their work methods appeared to be vastly better than the work methods of those reported by Southern Sotho, Xhosa, Tswana and Chinese speaking learners who experienced a decrease in academic achievement between the two examinations.

Table 5.13: **Scheffé results for the interaction between changes in academic achievement and language with respect to EA**

Group	N	$\overline{X}$	s
Group 1	18	22.611	7.1959
Group 2	36	20.250	6.8884
Group 3	9	24.222	9.4443
Group 4	41	23.195	7.7789
Group 5	13	17.385	7.0774
Group 6	20	25.650	7.8825

Table 5.13 suggests that the mean for group 5 is lower than the means of the rest of the groups with regard to EA especially when compared to group 6. This would seem to suggest than the Southern Sotho, Xhosa, Tswana and Chinese speaking learners who experienced a decrease in academic achievement between the two examinations were less inclined to accept the ideals, objectives and requirements of the education system than the rest of the sample were , especially the Southern Sotho, Xhosa, Tswana and Chinese who experienced an increase in their academic achievement. It is interesting to note that for the other two language groups (English/Afrikaans) the learners who experienced an increase in academic achievement were less likely to accept the values of the education system than the learners in these language groups that experienced decreases in their academic achievement. The difference between the means for the sample of Southern Sotho, Xhosa, Tswana and Chinese speaking learners is especially

striking.

5.3   DISCUSSION OF RESULTS

This section will attempt to give possible interpretations of the results that were reported in section 5.2. An attempt will also be made to explain these findings in terms of the theoretical exposition of the literature review. This discussion of the data will follow a specific structure. The findings regarding gender will be dealt with first. A discussion of various findings regarding language will then be discussed. Finally the findings regarding the interactions between academic achievement and language will be dealt with.

The most significant differences were found with respect to gender. Female learners were found to be more anxious, unsure of themselves and more likely to engage in directionless behaviours than their male counterparts. This may be ascribed to gender differences in maturation rates during puberty. It was stated in the literature review that females reach puberty before males do. Consequently, males may not have experienced the same degree of physical, cognitive and social development as females by the time they make the transition to secondary school. Thus the majority of female learners need to deal with the effects of pubertal development as well as the demands of changing from one educational phase to the next. Conversely, male learners may appear less anxious and unsure of themselves due to the fact that the majority of them have only had to deal with the transition to secondary school. The lag they experience in pubertal development may make the transition to secondary school a less anxious experience for them than it is for their female counterparts.

Female learners were also found to be more socially skilled than male learners during the transition from primary to secondary school. The female learners in the sample displayed better general social skills than the males. They also seemed better able to get along with members of the same sex than the males were. The differences in pubertal timing referred to earlier could also play a role here. The more advanced cognitive development of most females may allow them to be better able to accurately predict people's future

behaviour. The development of meta-cognition and hypothetical thinking may also allow these learners to develop the insight required for successful social interaction at an earlier age than their male peers do. It would thus seem that in spite of being exposed to developmental and academic stressors during the transition to secondary school, female learners are better socially adjusted than male learners are.

The female learners in the sample also appeared to display a greater degree of moral sense than the males did. They thus felt that their behaviours were in keeping with the expectations of their specific social systems. Here, females' advanced cognitive abilities could cause them, by way of hypothetical reasoning, to see the way in which rules and social conventions relate to the orderly functioning of society. Thus they see the authority of the systems in which they move in context. Their more advanced social adjustment may also play a role in facilitating this insight. Female learners seem better adjusted in terms of their social interactions than male learners are. It thus stands to reason that female learners may possess a greater degree of interpersonal sensitivity. Consequently, they may be more inclined to accurately predict the effects of their actions upon other people. They may thus be able to see the logic behind obeying rules and do not do so just to avoid punishment. The acceptance of the educational and other social institutions may also be more important for female learners than for their male counterparts (Wentzel & Asher, 1995). Female learners' higher rate of physical development may cause people to engage them in more adultlike social interactions than they would with the physically less mature males (Graber et al., 1997).

The two sexes also seem to differ with respect to their study habits and attitudes. The female learners in the sample reported more effective study habits and more positive attitudes toward the educational environment than their masculine counterparts. Female learners may be better able to engage in hypothetical reasoning and in so doing, see the importance of effective study orientation within their broader educational context. Another possible explanation is that their greater degree of moral sense makes female learners more inclined to follow the study habits considered to be acceptable by the education system. Their moral sense may tend to be responsible for their positive opinions with respect to the ideologies of the education system and approval of teachers' behaviours. Having established the effect of gender on adjustment and general study

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orientation it now becomes necessary to investigate the role played by language.

Significant differences in adjustment were also found to exist between the different language groups. English speaking adolescent learners appear to feel more confident in their physical abilities, are more confident in their abilities to enjoy life and work effectively and appear generally more satisfied with their bodies than the Southern Sotho, Xhosa, Tswana and Chinese learners in the sample. Cultural factors may well play a role in this instance. The group of learners that feel less sure of themselves constitute the cultural minority in the old model C education system. The English learners may thus feel more confident in an education system that largely reflects their culture. Conversely, the Southern Sotho, Xhosa, Tswana and Chinese learners may feel less sure of themselves in an education system that may possibly not reflect the standards and values of their various cultures.

English speaking learners who experienced a decrease in their academic achievement during the transition to secondary school, appeared to feel more confident in their physical abilities to work effectively and to enjoy their lives than Southern Sotho, Xhosa, Tswana and Chinese learners who experienced a decrease in their academic achievement over the same period. The English speaking learners may feel more confident in their abilities, in spite of their decreased performance, due to the fact that the educational system fits in with their culture in general. There is also an indication that English speaking learners may experience a greater degree of personal freedom than learners from other language groups. Their higher degree of personal freedom may also help to give them a greater feeling of control over their situation in that they are able to formulate their own goals and to pursue them in a manner they see fit. English speaking learners were also more inclined to feel that they had greater freedom to set goals and follow them in the manner they see fit, without excessive interference from older people in their environment. The Afrikaans, Southern Sotho, Xhosa, Tswana and Chinese speakers in the sample reported significantly lower levels of perceived personal freedom than their English speaking peers. This may also indicate cultural differences with respect to the degree of control that parents feel they need to exercise over their children during early adolescence. It would appear that the young English speaking adolescents are allowed to assume a significantly higher degree of control over their lives than the

adolescents from the other language groups are.

Various findings were also made with respect to the interaction between academic achievement and language. Southern Sotho, Xhosa, Tswana and Chinese learners who experience a decrease in academic achievement tend to regard their families and socio-economic circumstances in a negative manner. Their decreased academic achievement may thus, in part be attributed to a lack of family support (Crystal et al., 1994). The influence of the family on academic achievement should thus not be underestimated.

Another tendency seems to have been for the English speaking learners who experienced a decrease in academic achievement to report a higher degree of personal freedom than the Southern Sotho, Xhosa, Tswana and Chinese speaking learners who experienced a decrease in their academic achievement did. The possible lack of parental involvement or domestic support could have played a role.

Finally, there also seems to have been a tendency for the Southern Sotho, Xhosa, Tswana and Chinese speakers who experienced an increase in academic achievement during the transitional period to report better study habits and more positive attitudes towards the education system (general study orientation) than the Southern Sotho, Xhosa, Tswana and Chinese speaking learners who experienced a decrease in their academic achievement did. They were more likely to begin tasks on time, employ effective study methods, accept the ideologies of the education system and were less inclined to engage in time wasting and procrastination. This may tend to indicate the role that culture plays. These non-traditional members of this specific educational system seem to have to accept the philosophy of the education system and apply themselves to effective study methods in order to deal with crises in their educational environments. It would thus seem that these learners have to put in a greater effort than their English and Afrikaans speaking counterparts in order to achieve the same level of academic success.

Various conclusions may be drawn in light of the preceding discussion. Firstly, gender differences seem to exist with respect to various aspects of adjustment during the transition to secondary school. Male learners appear to be less anxious, while female learners appear to be better socially adjusted, more positive in their attitudes toward

education and more effective with respect to their study habits. The second area where significant differences seem to exist with regard to adjustment during this transitional period is language. English speaking learners seem to be more confident in their abilities to enjoy life and work effectively and seem more satisfied with their bodies than the Southern Sotho, Xhosa, Tswana and Chinese speaking learners who experienced a decrease in their academic achievement were. This belief was evident even when they experienced a decrease in their academic achievement. The English speaking learners also appear to enjoy a greater degree of personal freedom than the other language groups in the education system do. There also seems to be the possibility that a general tendency may exist for English speaking learners who experience a decrease in academic achievement during this transitional period to report a greater measure of personal freedom and to feel that their parents or other significant adults have little control over them. The minority language groups in the study may also tend to have to accept their educational environment in totality in order to be able to achieve academically. Learners within this group who do not feel that they get sufficient support from their families may also tend to experience a decrease in academic achievement during the transition from primary to secondary school.

A general conclusion may be reached with respect to the interaction between academic achievement and language. The Southern Sotho, Tswana, Xhosa and Chinese speaking learners who experienced a decrease in their academic achievement appear to be the least well adjusted group within the sample. The means for this group with respect to health, family influence, personal freedom and all four general study orientation sub-scale were the lowest for the sample. This may be ascribed to the cultural factors mentioned previously as well as the fact that the majority of these learners receive instruction in their second or even third language. It would thus stand to reason that the Southern Sotho, Xhosa, Tswana and Chinese speaking learners who experienced an increase in their academic achievement would need to display the superior scores on the general study orientation sub-scales in order to be able to cope with these language and cultural issues within the educational environment.

5.3   RECOMMENDATIONS

Various problematic aspects concerning this study must be taken into account before any recommendations for further research can be made. The main criticism of this particular study concerns the size of the sample used. Due to certain constraints regarding testing times and the availability of academic records, a relatively small sample was obtained. This resulted in changes in academic achievement being classified as positive or negative. Thus no provision was made for learners whose academic achievement stayed relatively stable during the transition to secondary school. Consequently, the difference between improved and decreased academic achievement may, in some instances, not have been significant. The result is that some of the conclusions reached with regard to academic achievement may not be valid. The size of the sample also resulted in reduced cell sizes being used in the post hoc procedures. This may have lead to certain significant differences not being detected due to the smaller cells. However, the tendencies that could have been suggested by the means of variables that were shown to be significant by the post hoc procedures were reported and discussed in an attempt to counter the effect of the smaller cells. Findings regarding the Other language group may also not be valid due to the fact that this group was not homogeneous. The Southern Sotho, Xhosa and Tswana speaking learners are representative of previously disadvantaged groups, while the Chinese speaking learners are not. Consequently, the findings of this study would have been more valid if the Chinese speaking learners were grouped on their own. However, due to the size of the sample, it was not possible to divide these language groups from each other.

It would seem that certain language or cultural differences exist with regard to general adjustment and academic achievement during the transition from primary to secondary school. These cultural differences, however, warrant further investigation. The differences in adjustment and general study orientation with regard to gender also warrant further investigation. It needs to be determined whether these gender differences can be explained in terms of differing rates of maturation. It may thus be advisable to attempt to determine whether the differences reported in this study still exist 12 to 18 months later.

It is recommended that these differences in general adjustment be investigated using more qualitative research methods. The aim would be to attempt to discover the dynamics behind many of the quantitative findings reported in this study. This would perhaps better enable one to get an idea of the processes mediating general adjustment during the transition not only from primary to secondary school, but also from late childhood to early adolescence. The gender differences that occur with respect to adjustment and general study orientation have certain implications for the development of any programmes aimed at enhancing individual adjustment capabilities during adolescence. The strengths and weaknesses of each gender should be taken into account, and while many common needs do exist it would seem that in order for a programme to be truly effective it would have to approach males and female in very different and specific ways. The same care is needed when designing a programme aimed at learners from previously disadvantaged groups. Firstly the important role that general study orientation played should be taken into account. A predominantly skills based approach would seem to be most beneficial in this instance. Secondly, to assume that study habits and attitudes are sufficient to bring about effective changes in academic achievement would be naïve. It is evident from the results of the study that domestic and intrapersonal factors that affect these learners' daily lives need to be addressed before they will be able to maintain effective sustained academic progress.

SUMMARY

Adolescence is a time of immense physical, cognitive and emotional development. This transition from childhood to adulthood begins with the onset of puberty. Puberty also coincides with the transition many learners have to make from primary to secondary school. This transition confronts adolescents with new educational environments and challenges. Some adolescent learners experience a great deal of stress during this period and are thus not able to maintain the same level of academic achievement as they did in primary school. Other learners, however, appear to make the transition with very little difficulty. These learners are able to maintain or even improve upon their previous level of academic achievement. These differing experiences during the transitional period may be due to differences in the learners' adjustment. Learners' study habits and attitudes serve as important coping mechanisms within the changing educational environment. Specific attention was also given to the role of the family, peers, school and academic skills during the transition from primary to secondary school.

The sample consisted of 137 grade eight learners from four secondary schools in the greater Bloemfontein area. The learners were divided into two groups on the basis of whether their academic achievement had improved or decreased from the end of grade seven to the middle of grade eight. These two groups were then compared with respect to their adjustment and general study orientation. The effects of gender, language and residential status upon adjustment and general study orientation were also investigated. Attention was also given to the interaction between changes in academic achievement and each of the above-mentioned independent variables. The statistical analysis of the data was performed by employing a multivariate analysis of variance (MANOVA). An analysis of variance (ANOVA) or post hoc t-test (Scheffé) was then used to determine the direction of any differences that were indicated by the MANOVA.

Significant differences were found to exist between male and female learners with regard to their general study orientation and certain aspects of their adjustment. Differences were also found to exist between English, Afrikaans and other language speaking learners with respect to their adjustment and general study orientation. Although no significant differences were found with regard to changes in academic achievement,

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differences were found to exist with respect to the interaction between change in academic achievement and language. Differences seem to exist between the adjustment and general study orientation of learners from different language groups who experienced an increase in academic achievement and those who experienced a decrease in academic achievement. Differences also seem to exist within the same language group with regard to changes in academic achievement. Based on these findings various suggestions for future research and development were made.

OPSOMMING

Adolessensie is 'n periode van ingrypende fisiese, kognitiewe en emosionele ontwikkeling. Hierdie oorgang vanaf kinderjare na volwassenheid word deur die aanvangs van puberteit gekenmerk. Puberteit val saam met die oorskakeling wat meeste leerders vanaf primêre na sekondêre skool moet maak. Hierdie oorskakeling gaan met nuwe opvoedkundige omgewings en uitdagings gepaard. Sommige adolessente leerders ondervind 'n groot mate van spanning tydens hierdie periode en is nie in staat om dieselfde vlak van akademiese prestasie te handaaf as wat in die primêre skool die geval was nie. Ander leerders blyk die oorgang weer met betreklik min moeite te oorbrug. Laasgenoemde leerders is in staat om hul vorige vlak van akademiese prestasie te handhaaf of selfs daarop te verbeter. Hierdie uiteenlopende ervarings tydens die oorgangsperiode kan aan verskille in die leerders se algemene aanpassing toegeskryf word. Leerders se studiegewoontes en- houdings dien as belangrike hanteringsmeganismes binne die veranderende opvoedkundige konteks. Spesifieke aandag is ook aan die rol van die gesin, die portuurgroep, die skool en akademiese vaardighede tydens die oorgang van primêre na sekondêre skool geskenk.

Die steekproef het uit 137 graad agt leerders uit vier sekondêre skole in die groter Bloemfontein-area bestaan. Die leerders is in twee groepe verdeel op grond van of hul akademiese prestasie verbeter of verswak het vanaf die einde van graad sewe tot die helfte van graad agt. Die twee groepe is toe op grond van hul aanpassing en algemene studie-oriëntasie vergelyk. Voorts is die invloed van geslag, taal en residensiële status op aanpassing en algemene studie-oriëntasie ondersoek. Aandag is ook aan die interaksie tussen veranderings in akademiese prestasie en elk van bogenoemde veranderlikes geskenk. Die statistiese ontleding van data is uitgevoer deur die gebruik van meervoudige variansie-ontleding (MANOVA). 'n Variansie ontleding (ANOVA) of post hoc t-toets (Scheffé) is gebruik om die rigting van enige verskille aangedui deur die MANOVA te bepaal.

Daar is gevind dat betekenisvolle verskille tussen manlike en vroulike leerders bestaan met betrekking tot hul algemene studie-oriëntasie en sekere aspekte van hul aanpassing. Daar is ook verskille gevind tussen Engels- en Afrikaansprekendes asook leerders van
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ander taalgroepe aangaande hul aanpassing en algemene studie-oriëntasie. Geen betekenisvolle verskille ten opsigte van veranderinge in akademiese prestasie het na vore gekom nie. Daar is wel bevind dat verskille aangaande die interaksie tussen veranderinge in akademiese prestasie en taal bestaan. Dit blyk dat daar verskille bestaan tussen die aanpassing en algemene studie-oriëntasie van leerders uit verskillende taalgroepe wat hul akademiese prestasie verbeter het en diegene wie se akademiese prestasie verswak het. Daar blyk ook verskille in dieselfde taalgroep te bestaan met betrekking tot veranderinge in akademiese prestasie. Verskeie voorstelle vir toekomstige navorsing en ontwikkeling is na aanleiding van hierdie bevindinge gemaak.

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APPENDIX 1

Biographical questionnaire

Please complete the following

(1) Name: ....

(2) Gender: ....

(3) What language do you speak at home? ....

(4) Are you a boarder or a day scholar? ....

(5) In what year did you pass grade 6 (std 4)? ....

Thank you for your co-operation.

Voltooi asseblief die volgende

(1) Naam: ....

(2) Geslag: ....

(3) Wat is jou huistaal? ....

(4) Is jy in die koshuis of by die huis woonagtig? ....

(5) Watter jaar het jy graad 6 (st. 4) geslaag? ....

Dankie vir jou samewerking.