THE INFLUENCE OF SCHOOLING ON THE RESILIENT BEHAVIOUR AND ACADEMIC PERFORMANCE OF POVERTY-STRICKEN ADOLESCENTS IN GAUTENG SCHOOLS

by

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I declare that:

The influence of schooling on the resilient behaviour and academic performance of poverty-stricken adolescents in Gauteng schools is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

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SIGNATURE DATE
(Mrs)

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"You may encounter many defeats but you must not be defeated"

Maya Angelou

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SUMMARY

The social and economic environments in which children develop are regarded as important variables which relate to academic performance. In order to support learners in achieving academically, an understanding of the role of these different variables is essential. The aim of the study was to investigate the influence of additional educational support on the resilient behaviour and subsequent academic performance of adolescents in Grades 9 and 10. A sample of 117 high school adolescents was used. Schools that offer additional educational support tend, on average, to show a healthier teacher-learner relationship, more parental involvement, superior cognitive development and better study orientation. All these factors were also found to contribute to a learner's potential to demonstrate resilient behaviour. Based on the literature study and the empirical investigation, recommendations to parents, teachers and schools have been made.

Key words: resilient behaviour, academic performance, additional educational support, cognitive development, study orientation, teacher-learner relationship, parental involvement

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CHAPTER 1

AWARENESS AND ANALYSIS OF THE PROBLEM, AIM AND PROGRAMME OF THE RESARCH

1.1 Awareness of the problem

1.1.1 Introduction and background of the study

Before the outbreak of the Second World War, the discipline of psychology was preoccupied with three central tasks, namely (1) curing mental illness, (2) improving the lives of the general population and (3) studying individuals who exhibit genius (Hefferon & Boniwell, 2011:5; Seligmann & Csikszentmihalyi, 2000:6). However, the extensive psychological damage that occurred as a product of both world wars resulted in research which focused mainly on treating mental illness. This focus on pathology proved both valuable and damaging. Although the existing pathogenic model yielded beneficial results in terms of diagnosing and treating mental illness, psychology consequently became fixated on deficits and functioned in a dominantly problem-oriented paradigm.

In contrast to the entrenched deficit model, multiple theorists have contributed to modifying the focal point of psychology from mental illness to mental health. Although the "Positive Psychology" movement was christened in 1998 by Seligmann (Seligmann & Csikszentmihalyi, 2000:5-14), research into strengths began a few decades before that. In fact, Maslow (1945:201) was the first to use the term "positive psychology" when he commented that "the science of psychology has been far more successful on the negative than on the positive side; it has revealed to us much about man's shortcomings, his illnesses, his sins, but little about his potentialities, his virtues, his achievable aspirations, or his psychological height".

Seligmann and Csikszentmihalyi (2000:7) describe the contribution of humanistic psychologists such as Maslow and Rogers as invaluable in terms of widening positive psychological perspectives but as having lost momentum when Humanistic Psychology failed to accumulate much of an empirical base. It was only in the 1970s

when pioneering psychologists began to draw attention to the phenomenon of resilience that the positive psychology movement was rekindled (Masten, 2001:235).

Attending to the concerns that Maslow initially raised, resilience research is contributing to the movement away from a pathology-based medical model where problems, needs and deficiencies are accentuated. Although the concept of resilience grew out of deficit-focused research, it places emphasis on strengths and assets despite the presence of deficits.

1.1.2 Resilience

There are currently a multitude of definitions for the construct of resilience. Luthar, Cicchetti and Becker (2000:543-562) refer to resilience as a "dynamic process encompassing positive adaptations within the context of significant adversity". Taylor and Dorsey-Gaines (1998:195) succinctly define a resilient response as the ability to behave proactively rather than reactively to adverse circumstances. In one notable study on the subject, Masten, Best and Garmezy (1990:425) defined resilience as "the capacity for or outcome of successful adaptation despite challenging or threatening circumstances". Rutter (2006:1-12) defines resilient behaviour as reduced vulnerability to environmental risk, overcoming stress or adversity, or achieving a relatively good outcome despite risk experiences. Although many current definitions of resilience vary greatly in their conceptualisation, operationalisation and measurement, most definitions of resilience encompass the phenomenon of a resilient reaction occurring despite exposure to risk.

Since the first longitudinal study began in 1955 (Werner & Smith, 1977), resilience research has evolved significantly, resulting in numerous implications for research today. Rutter (2012:335) believes that resilience should not be viewed as a synonym for competence or positive psychology. The phenomenon of resilience is far too complex to simply be a component of another theory. Furthermore, resilience is no longer viewed as a fixed personality attribute which implied that an individual is considered invincible or invulnerable to risk (Masten, 2001:227). Individuals should thus not be referred to as "resilient" but rather as demonstrating resiliency or resilient behaviour.

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Initial resilience research was also focused on defining variables referred to as "protective factors" and "risk factors" (which will be discussed in more detail in chapter 2, sections 2.4. and 2.5) and the interplay between the two.

However, understanding the dynamic nature of resilient behaviour involves more than identifying the multiple assets and risks that respectively predispose or hinder an individual's capacity to behave resiliently. Thus, the emphasis in resilience research has shifted from a variable-focused approach to a study of the resilience process. To date, one of the most valuable advances in the field of resilience is the discovery that the process of resilience is embedded in the individual's context and is continuously shaped by socio-cultural resources (Ungar, 2008:218-235, Ungar, Liebenberg, Boothroyd, Kwong, Lee, Leblanc, Duqued & Makhnach, 2008:166-180, Theron & Malindi, 2010:719, Theron & Theron, 2010:1).

The view that resilience is contextually embedded has noteworthy ramifications for an understanding of resilient behaviour, specifically in South African context. Since the United States and Europe have conducted the most prominent and systematic research on risk, resilience and coping thus far (Boyden & Cooper, 2007:2), there is clearly a need for a South African empirical base particularly because the South African context is perforated with adversities such as the HIV/AIDS pandemic, poverty and high levels of violence.

In a review conducted on South African resilience studies (Theron & Theron, 2010:1-8), a noticeable gap in South African resilience literature was identified. Although the incidence of resilient behaviour in the South African context has been explored with qualitative, quantitative and mixed-method designs, the questionnaires utilised were not of South African origin nor were the studies replicated. In addition, much of the research conducted in the South African framework, was focused on the individual traits which are regarded as being resilient, instead of on the process of resilience. Theron and Theron (2010:5) believe that the majority of South African research does not conceptualise resilience as the complex, dynamic phenomenon that it is since the research fails to account for the transaction between individual and contextual resources within the family and community.

However, in studies conducted by Dass-Brailford (2005:574-591), Barbarin, Richter and De Wet (2000:16-25), Ebersöhn (2007:1–27), Germann (2005:39-53), Johnson and Lazarus (2008:19–30) and Theron (2007:357-376) both interpersonal and intrapersonal resources are accounted for.

1.1.3 Resilience, poverty and academic achievement

Although there is a burgeoning volume of research into the concept of resiliency among children and adolescents, there appears to be a dearth of research that provides insight into how particular children can overcome the detrimental consequences of existing in poverty (Dass-Brailford, 2005:575). This is particularly relevant in the South African context as the single most important issue facing South Africa almost twenty years after the transition to democracy is breaking the grip of poverty on a substantial portion of its citizens. There is consensus amongst most economic and political analysts that approximately 40 per cent of South Africans are living in poverty – with the poorest 15 per cent engaged in a desperate struggle to survive (Landman, 2003:01).

These harrowing statistics have had, and will continue to have, devastating effects on our society if one considers that the social and economic environment within which children and adolescents develop is regarded as the most important predictor of their overall wellbeing. A vast amount of evidence demonstrates that children and adolescents living in poverty endure negative life events and persistent strains that are damaging to their positive development (Coleman & Hagell, 2007:1-17). Furthermore, studies show strong and consistent links between poverty and poor academic competence, indicating that impoverished children are at high risk for academic problems (Lefalle, 2010:13-20). As a result of this high risk, these individuals become further disadvantaged in both their education and skills acquisition and will thus struggle to find employment. These same individuals will most probably remain in their disadvantaged environment and subsequently raise their own families in the same context, continuing what is referred to as "the cycle of poverty" as depicted in Figure 1.1.
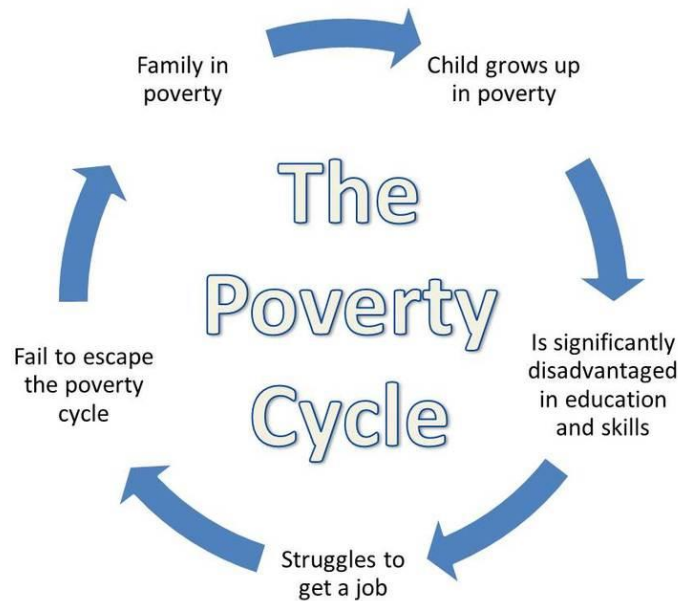
Figure 1.1: The cycle of poverty

However, a sizable portion of impoverished individuals conquer this adversity and go on to lead secure and productive lives. Despite living with disadvantage, these children and adolescents show resilient behaviour by achieving academic success, and in turn perceive themselves positively, avoid delinquency, and adequately manage their interactions with their environment (O'Looney, 2010:25-31). For this reason, academic achievement is considered one of the appropriate indicators of academic competence and resilience for school-age children (Masten & Coastworth, 1998:205-220). Academic success in the South African context can be regarded as a measure of resiliency, despite the fact that it might be considered an ordinary developmental task in other societies (Dass-Brailford, 2005:576).

The study of resilient behaviour in the context of poverty, particularly from a South African perspective in which disadvantage is so prevalent, could provide a conceptual and analytical framework for examining the ways in which individuals overcome the negative outcomes of poverty. In addition to understanding the phenomenon of resilient behaviour within the South African context, this framework could prove useful in promoting resilient behaviour in individuals and improving the resilience trajectory within disadvantaged communities.

The insight gained from the understanding of the process and cultural context in which resilient behaviour occurs, can be informative for families striving to break the cycle of poverty. Accordingly, understanding how resilient children and adolescents succeed academically despite their disadvantaged circumstances may assist professionals in the school context to promote the academic competence and adaptation of impoverished learners.

1.2 Formal statement of the problem

It becomes quite evident from previous research findings that the study of resilient behaviour is both relatively novel and complex. Research on resilience has followed a variable-focused approach, centred on identifying the various assets and risks present in the phenomenon of resilient behaviour. However, considering that resilience is a dynamic, culturally and context bound process, the transactions between individuals and their socio-cultural environment must be observed. The study of resilient behaviour can thus not be isolated from the context in which the behaviour occurs.

Measuring resilient behaviour adequately in the South African context is particularly pertinent since our society is perforated with poverty and its deleterious effects. Many individuals become trapped in the cycle of poverty as a result of their disadvantaged education and the ensuing lack of opportunities. However, there are other individuals within the same poverty-stricken environment that excel academically despite their constant exposure to adversity. Academic achievement is consequently regarded as a determinant of resilient behaviour since a strong relationship appears to exist between the two variables.

Aside from the influence of resilient behaviour, academic performance in itself is influenced by a multitude of factors. In order to support learners to achieve academically, an understanding of the role of these different variables is essential. As in the case of resilient behaviour, academic achievement can be influenced by both individual and contextual variables. Figure 1.2 depicts variables in the individual, school and family which influence academic achievement.
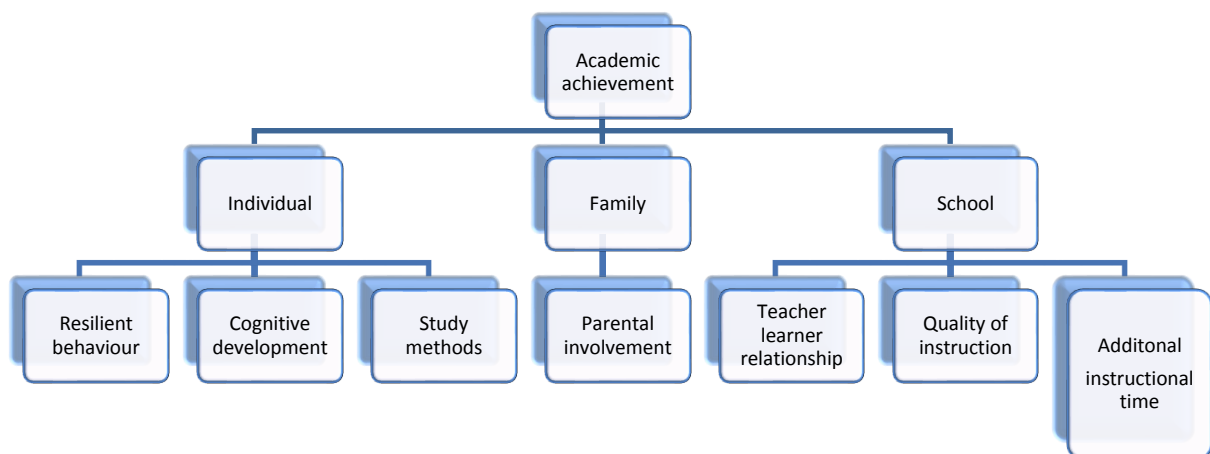
Figure 1.2: Variables affecting academic achievement

The factors contributing to academic success are of particular interest in a poverty-stricken context since adding educational input will have an influence on both academic achievement and resilient behaviour, considering the correlation between the two. Additional educational support in terms of cognitive development, study methods, teacher-learner relationships, parental involvement, quality of instruction and additional instructional time should thus have an influence on both academic achievement and resilience.

Therefore, this investigation will revolve around the following research questions:

- How will additional educational support influence the resilient behavior of high school learners?
- Will there be a significant relationship between resilient behaviour and academic achievement?
- Will there be a relationship between resilient behaviour and other factors influencing academic achievement such as teacher-learner relationships, parental involvement and cognitive factors?
- Will additional educational support influence academic achievement?
- How do resilient behaviour and other variables such as teacher-learner relationships, parental involvement and cognitive factors jointly relate to academic achievement?

1.3 Aim of the study

The aim of the study is to investigate and describe the influence of additional educational support on the resilience and subsequent academic performance of adolescents in Grades 9 and 10. The role of variables such as cognitive functioning, parental involvement, teacher-learner relationships and study methods in resilience and academic performance will also be taken into account.

Firstly, a literature study will be carried out with the following aims:
- Analyse the construct of resilience by exploring various definitions and theories on the development of resilience.
- Identify inherent and contextual variables which either promote or hinder resilient behavior.
- Explore individual and environmental factors which contribute towards the academic achievement of adolescence.
- Establish the relationship between resilient behavior and academic achievement.

Secondly, an empirical investigation will be carried out with the following aim:
- Determine how additional educational support will influence the resilient behavior of high school learners.
- Determine the relationship between resilient behavior and academic achievement.
- Determine how resilient behavior relates to parental involvement, study methods, cognitive variables and teacher-learner relationships, and how these variables jointly relate to academic achievement.

1.4 Programme to follow

In chapter 1 the introduction, research problem, aim and the outline of the empirical research study were discussed.

Chapter 2 will provide a literature study pertaining to the phenomenon of resilient behaviour. Various definitions, theories and approaches relating to resilient behaviour will be explored. The multiple factors that contribute to and adversely affect resilient

behaviour will be investigated. A critical analysis of various commercially available instruments to measure resilence will be discussed briefly. Various strategies exploring the facilitation of resilient behaviour will be explored.

Chapter 3 will explore literature relating to the multiple factors that influence academic performance in adolescents. Research regarding inherent and environmental factors which impact individual academic achievement will be discussed. The relationship between academic performance and resilience will also be investigated.

Chapter 4 will contain the research design of the empirical investigation. Hypotheses that relate to the research problem will be formulated, based on the findings from the literature study. The manner in which the sample was selected will then be discussed. The development of a questionnaire to measure resilience and other variables such as parental involvement, teacher-learner relationship, cognitive performance, study methods and academic achievement will also be explored. The research procedure that was followed during the testing phase will be discussed in chapter 4.

Chapter 5 will provide an explanation of the results of the empirical investigation. Conclusions will be drawn as to the effect that resilient behavior and other important variables have on the academic performance of poverty-stricken adolescents.

Chapter 6 will deal with the educational implications of the research findings. This chapter's primary focus is on recommendations and suggestions for facilitating resilient behaviour. The contribution and limitations of the study are discussed and suggestions for further research will be given.

CHAPTER 2

LITERATURE STUDY AND BRIEF OVERVIEW OF THE CONCEPT OF RESILIENT BEHAVIOUR

2.1 Introduction

In this chapter, a brief overview of the concept of resilience will be provided. Since there are large numbers of viewpoints on the subject of resilience, possible definitions of the topic will be explored. After defining the concept, the theories which contributed to the development of resilience will be discussed in order to provide a historical context and distinguish between the contrasting viewpoints. Thereafter the relationship between the main elements that are involved in the resilience process, namely risk and protective factors, will be described, using various sources of prior theoretical and empirical research in order to conceptualise the dynamic nature of resilience. Since there is not simply one standardised measure used to ascertain resilience, the chapter will explore various methods of measuring resilience that are currently in use. Seeing that the aim of resilience research is to enhance and improve resilience in individuals, the chapter will then explore how resilience can be changed.

2.2 Defining resilience

Norm Garmezy (1985:213), a pioneer in the field of resilient behaviour, described resilience in children and adolescents as "the child who works well, plays well, loves well and expects well". There have been numerous variations on the definition since.

Werner and Smith (1982:2) considered resilience as the capability of individuals to cope with the internal stress of their respective vulnerabilities (such as developmental imbalances and unusual sensitivities) and external stressors (such as illness, death or loss, and dissolution of the family). Richardson (2002:307-310) defines resilience as a process of reintegration in which the individual returns to normal functioning or homeostasis after exposure to adversity, with the help of certain protective factors. Resilience is about "bouncing back" from setbacks in life. It refers to one's ability to cope with adversity, hardship and challenging behaviour.

Resilience must not be understood as the absence of vulnerability or as immunity to vulnerability. Instead, it refers to the process of and the capacity for achieving successful outcomes, and adaptation despite these challenging or threatening circumstances (Masten et al., 1990:425).

Smokowski, Reynolds and Bezruczko (1999:426), Luthar (2003:543), Masten (2001:228) and Masten et al., (1990:426) describe the critical conditions within the dynamic process of resilience. These critical conditions occur under the following conditions:

- A person is exposed to significant threat(s) and severe adversity. In other words, a person must currently be experiencing or have experienced adverse circumstances such as chronic illness, death of loved ones, family discord, trauma et cetera. These adverse experiences occur to the extent that they are judged to have the potential to disrupt a person's normal healthy development and age appropriate adjustment.
- A person experiences good outcomes/positive adaptations despite major threats and adversity. In other words, a person can overcome difficult experiences and maintain positive adjustment.

The nature of resilience encompasses the dynamic relationship between two main factors, namely risk and protective factors.

Risk factors are factors that place the individual at risk for negative outcomes or dysfunctional behaviour. The very concept of resilience grew directly out of risk research (Masten et al., 1990:426) with Norm Garmezy, a pioneer of resilience, observing children at risk for manifesting psychopathological behaviour due to parental mental disorders and other socio-cultural disadvantages such as poverty and stressful life events (Nguyen, 2012:13).   Risk factors will be discussed in more detail in section 2.5.

On the other hand, protective factors can be defined as specific attributes or situations that are necessary for the process of resilience to occur (Dyer & McGuinness, 1996: 276–282). In other words, protective factors "protect" an individual from risk and

improve the odds of an individual achieving healthy outcomes or successful adaptation. It is important to note that protective factors which are beneficial for one individual may not be beneficial for another individual. In addition, protective factors that have led to healthy outcomes for an individual in a certain situation may not lead to healthy outcomes for the same individual in another situation. Protective factors will be discussed in more detail in section 2.4.

The interplay between risk and protective factors is referred to as a "risk and resilience" orientation (Fraser & Richman, 2001:1). The premise for this orientation is based on the idea that adaptational behaviour emerges from the interchange of (a) combinations of factors predictive of negative developmental outcomes (risk factors) and (b) combinations of counteracting factors that reduce and counterbalance risk (protective factors).

In addition to the risk and protective factors, one of the aspects that characterises resilience research is the recognition of "steeling effects" (Rutter, 2012:337). Exposure to stressors or adversities can have one of two outcomes. When exposed to adversity, an individual could either experience increased vulnerability through a sensitisation effect or, alternatively, the individual could experience decreased vulnerabilities through what is called a "steeling effect". This steeling effect thus creates a resistance to the amount of vulnerability an individual will endure in future exposure to adversity.

Using the concepts of risk, protective and steeling factors, Garmezy, Masten and Tellegen (1984: 97-111) and Donald, Dawes and Louw (2000:30-264) outlined three models that explain how resilience operates.

The first is a "compensatory model". In this model, a particular positive influence neutralises or compensates for the impact of other stresses (Cook & Du Toit, 2005:249). The second model is referred to as the "challenge model" where a child's exposure to adversity assists him or her to cope with future adversity. The third and final model is the "protective factor model" in which protective factors moderate the effect of exposure to risk and reduce the probability of a negative outcome.

2.3 The development of resilience

The concept of resilience originated in the 1970s. It began with the recognition of a huge heterogeneity in people's responses to environmental adversities (Rutter, 2012:335). Over the years, there have been many misconceptions about the concept of resilience that have been refuted upon further investigation.

One of the first misconceptions about resilient children was that they were originally regarded as having noteworthy personality traits or coping styles (Masten, 2001:227; Waller, 2001:290-291). These children were subsequently considered "invulnerable" or stress resistant. The term "invulnerability" seemed to refer to a stable personality trait and thus pioneers in the field first understood it as such.

More recently, the conceptualisation of resilience has shifted from being a stable personality attribute to a dynamic process characterised by constant change, activity and progress. (Nguyen, 2012:17).

Another misconception about resilient children is the belief that there is something inherently remarkable about them. Surprisingly, resilience is a very ordinary phenomenon (Masten, 2001:227) Individuals who demonstrate resilient behaviour do not show superior functioning when compared to peers who are exposed to the same adversities. This conclusion offers a more positive and attainable outlook on development and responses to adversity than the perception of the concept of resilience being a "superior" trait that some individuals possess.

2.4 Protective factors

Donald, Lazarus and Lolwana (2006:168) define protective factors as factors that compensate for shield, support, or strengthen a person's response to stress. Fraser and Richman (2001:4) add that protective factors are those individual characteristics or environmental conditions that help children and youth resist or otherwise counteract the risk to which they are exposed. Protective factors can also be referred to as resilience factors as they contribute to an individual's exhibiting resilient behaviour.

According to Macfarlane (1998:1-15) protective factors exist in three categories, namely:

- *Individual characteristics.* These include inherent attributes of resilient children themselves. Such attributes include age, gender, cognition and affect.
- *Family factors.* These are aspects of resilient children's families. Examples of such aspects include family cohesion, absence of marital discord and positive parenting.
- *Social support networks.* These take into account other facets of resilient children's wider environment. Such facets include peers and people outside the family.

The categories are now going to be discussed in detail in sections 2.4.1, 2.4.2 and 2.4.3.

2.4.1 Individual characteristics

Some of the individual characteristics that contribute to resilience are: gender, age, and cognitive, affective and social factors.

2.4.1.1 Gender

There have been many suggestions in the literature that gender may influence or modify responses to adversity (Rutter, 2010:316-331).

Males and females have shown different responses when experiencing adverse circumstances (Rutter, 2010:316-331). Males tend to develop externalising responses in which they express their emotions and feelings in a violent, defiant or aggressive way. In contrast, females exhibit internalising responses to adversity in that they direct their feelings and emotions inward. As a result, females may become withdrawn, depressed and anxious.

While each gender has specific strengths and vulnerabilities, research has identified that females tend to behave more resiliently than their male counterparts. The reason

for this is that females are less reactive to stress than males (Ferguson & Horwood, 2003:147). In other words, females are more adept at controlling their reactions to stressful experiences while males are more likely to act out aggressively. Taylor, Klein, Lewis, Gruenewald, Gurung and Updegraff (2000:411-429) explain that the biological reason for aggressive male responses to stress is that they have higher levels of testosterone. Females are also more likely to seek out and make use of social support systems, which alleviates the impact of stress.

2.4.1.2 Age

Studies on the relationship between age and resilient behaviour have rendered inconsistent findings. While some studies have found that resilience factors such as self-esteem decrease with age, other studies established that self-esteem and resilient factors are lower in young children (Frost & McKelvie, 2004:45-54, Bolognini, Plancherel, Bettwshart & Halfon, 1996:233-245).

Furthermore, Connor and Davidson (2003:76-82) found no significant correlation between age and resilience on the Connor-Davidson Resilience Scale (CD-RISC).

2.4.1.3 Cognitive factors

2.4.1.3.1 Intelligence

High intelligence has often been associated with competence, good problem-solving skills and success in later life – all of which are also regarded as traits associated with resilience.

Therefore, it is no surprise that research has shown a positive correlation between higher intelligence and resilient behaviour, despite exposure to stressful events (Fergusson & Lynskey, 1996:281-292, Garmezy et al., 1984:97-111). However, an intelligent individual will not necessarily be a resilient one. Resilient children may not be of higher intelligence or unusually gifted, but rather are adept at using whatever skills they have available.

2.4.1.4 Affective factors

Individual affective factors that influence resilient behaviour include self-concept, temperament and locus of control which will be discussed in detail in sections 2.4.1.4.1, 2.4.1.4.2, and 2.4.1.4.3.

2.4.1.4.1 Self-concept

Self-concept may be defined as an individual's view of himself or herself, which may or may not be realistic – or even similarly perceived by others (Sternberg, 2001:365). The formation and preservation of self-concept and self-efficacy serve as mechanisms to protect people against the psychosocial risk associated with adversity.

A general sense of personal worth and sense of identity appears to be critical for young people's mental health (Salami 2010:102). Individuals' self-concept plays a vital part in how those individuals assert their own identity. Adolescents who establish their personal identity can make complex personal, social, and familial adjustments which assist them to become more resilient.

The nature of the self-concept also plays a role in resilient behaviour. Luthar (2003:310) found that resilient youth had a realistic view of their self-concept. People with realistic self-concepts are aware of their negative and positive characteristics. They make use of their assets and set reasonable expectations for themselves based on what they know they are capable of. In contrast, those who have an unrealistic sense of self are less resilient because of the inaccuracy of the image they have of themselves.

2.4.1.4.2 Temperament

Werner and Smith (1992:100-180) believe that there has been sufficient evidence to suggest that temperamental and behavioural factors are associated with resilience to adversity. Resilience by definition involves overcoming adverse circumstances, and a positive temperament is one of the main mechanisms associated with coping with adversity. Masten and Powell (2003:13) elaborate on this by adding that temperament

and personality attributes such as adaptability, sociability, self-regulation skills and an optimistic outlook on life contribute to the resilience phenomenon in individuals.

Although optimism contributes to a resilient nature, this is only true as long as such optimism does not distort an individual's sense of reality and offer the individual a false sense of self.

2.4.1.4.3 Locus of control

Locus of control refers to people's beliefs about how much control they have over the events in their life. Rotter (1990:489-493) differentiated between an internal and external locus of control. People with an internal locus of control believe that they have control over their behaviour and its consequences. Those with an internal locus of control also tend to be less influenced by others and more self-motivated.

 In contrast, people with an external locus of control believe that events in their life, whether good or bad, are determined by forces over which they have no control (Sternberg, 2001:493). They regard events in their lives as occurring in spite of their individual efforts.

A plethora of research indicates that individuals with a strong internal locus of control are more resilient than those with an external locus of control (Macfarlane, 1998:20-30; Luthar, 1991:600-616; Richardson, 2002:307-321). If adolescents have internal locus of control and thus some sense of power or control over their environment, it becomes possible for them to hope, plan and set personal goals.

2.4.1.5 Social factors

In addition to the intrapersonal skills required for resilient behaviour, as discussed in 2.4.1, certain interpersonal social skills are also essential to resilient functioning.

2.4.1.5.1 Interpersonal skills

Good interpersonal skills have a bearing on the resilience of individuals. Social interaction provides a platform for individuals to learn important interpersonal skills such as empathy, respect for others and communication skills. These skills are also integral to resilient behaviour. Sociability and a good sense of humour have a protective value for older children because their social competence elicits positive responses from those around them (Steyn, 2006:32).

Other essential interpersonal skills that resilient individuals possess, include: the ability to make friends and sustain these friendships, to participate in a group activity, to interact with peers by sharing laughter and jokes and the ability to begin and end a conversation (McWhirter, McWhirter & McWhirter & McWhirter, 2006:56-124).

2.4.2 Family factors

Functional family environments act as buffers against chronic adversities. Similarly, children's competence in adversity reflects the relative resilience of that child's parental or family system. Parents who maintain emotionally responsive, structured environments for their children, despite adversity, allow for the child's attainment of competencies and for them to reach age-appropriate developmental tasks (Wyman, Cowen, Work & Parker, 1991:405-426).

Some of the family factors that contribute to a protective environment are: the absence of marital discord, the relationship between the child and the caregiver, positive parenting and family cohesion. These aspects will be discussed in greater detail in the following sections: 2.4.2.1 to 2.4.2.4.

2.4.2.1 Absence of marital discord

Substantial benefits are derived from positive family functioning, some of which include a healthy self-esteem, academic and social proficiency and coping strategies. The absence of marital conflict, violence and abuse helps to provide a safe and healthy environment for children.

An environment in which marital discord exists, is fraught with tension, inconsistency and dissonance. A common question relating to marital discord is whether parents who experience conflict and discord in their marriage should stay together for the sake of their children. Hetherington and Kelly (2002:177-210), Cowan and Cowan (1990:246-279) and Davies and Cummings (1994:387-411) found that any discord or conflict in a marriage, whether it occurs before or after divorce, is associated with a wide range of harmful outcomes for their children, including higher levels of depression, anxiety, externalising behaviours, lower levels of self-esteem and less social and academic competence. Therefore, parental discord will have a negative bearing on the resilience of a child exposed to such an environment.

2.4.2.2 Relationship with caregiver/guardian

A close relationship with a competent adult – be it a parent, relative or mentor – contributes to the resilience of an adolescent. Werner and Smith (1992:120-180) found that positive adaptation despite adversity depended on the quality of supportive relationships between adolescents and their parent/guardian. Caregivers who communicate openly with their children, provide reassurance and promote competence in their children, foster resilience through their relationship with their children.

Children classified as resilient report relatively more emotionally close relationships with their primary caregivers (Wyman, 2003:304). Compared to children who have no supportive caregivers, the presence of even one stable and supportive caregiver can have an impact on a child's resilience by alleviating the negative impact of multiple risk factors. The presence of a close relationship can protect or buffer the child thereby reducing the risk of the child's developing serious problems in later life (Cairns, 1996:12-19).

2.4.2.3 Positive parenting

Resilient adolescents are influenced not only by the presence of a parent or caregiver but also by the style and quality of parenting. Masten and Powell (2003:13) identified the quality of parenting (incorporating factors such as warmth, structure, monitoring

and expectations) as an attribute associated with resilience. Positive parenting exists when a parent:

- interacts openly with his/her offspring;
- offers consistent, language-based discipline;
- displays affection consistently; and
- instils boundaries and limits for the child (Wyman, 2003:314; Luthar & Zelazo, 2003:528).

Positive parenting not only helps children to develop intrinsic resilient capacities but also directly mediates coping responses to many adversities, such as poverty, disease, loss or community violence.

A child's resilience is also determined by the personality characteristics of the parents and not just by their method of parenting. Parents of resilient children were found to have greater positive personal efficacy as well as adaptive emotion-focused coping strategies. Parents of resilient children also feel strongly about achieving personal life satisfaction (Wyman, 2003:305).

2.4.2.4 Family cohesion

Research on family systems highlights family cohesion as an important interactional process for daily family functioning as well as for ensuring the wellbeing of individual family members (Walsh 2011:3-27). Families contribute to resilience by providing a cohesive and supportive environment with strong traditions, rituals and values. Walsh (2011:49-83) identified four key aspects of family cohesion which contribute to resilience as follows:

1. a capacity to obtain meaning out of adversity;
2. using humour as a coping mechanism;
3. obtaining a positive outlook on life; and
4. spiritual beliefs or beliefs in transcendence.

The level of cohesion in families can be affected by a myriad of factors. Firstly, the age of the children affects how connected the family is (Kalil, 2003:25). The majority of families with younger children tend to be more connected (i.e. to have higher levels of family cohesion), whereas families with adolescents, and older couples tend to be less engaged (i.e. to have lower levels of family cohesion).

Secondly, remarried and reconstituted families show differences in cohesion when compared to first-married families   (Waldren, Bell, Peek & Sorrell, 1990:13-28). First-married families tend to have significantly higher levels of cohesion and adaptability. Remarried and reconstituted families experience higher levels of stress than first-married families – which may have a negative impact on the level of resilience of the children in the marriage. Cohesion is also directly influenced by the level of trust present in the relationships in the family. Since reconstituted families consist of different members of previous first-married families, there are often lower levels of trust in reconstituted families and consequently lower levels of cohesion.

2.4.3 Social support networks

In addition to the family, the social support networks of resilient adolescents include peers and people outside the family. These networks will be expanded upon in sections 2.4.3.1 and 2.4.3.2.

2.4.3.1 Peers

During adolescence, the role of the peer group is paramount in the socialisation process and identity formation of the adolescent. Positive peer relationships can even ameliorate the effect of harsh or punitive parenting and moderate family adversity (Criss, Pettit, Bates, Dodge & Lapp, 2002:1220). Positive relationships with prosocial and rule-abiding peers contribute to resilience in adolescents (Masten & Powell, 2003:13).

If the adolescent experiences a sense of belonging, and absorbs positive values through peer group interaction, it is possible that he or she will develop resilience.

2.4.1.2 People outside the family

According to Bandura's *social learning theory*, children learn and imitate behaviour that they have observed in other people (Woolfolk, 2007:230). Therefore, if a child observes resilient behaviour and that behaviour is rewarded, there is a possibility that the child will exhibit resilient behaviour. Educators, school counsellors, sports coaches, religious leaders and other adults are among some of the possible people whom the adolescent will observe and with whom an adolescent can identify. The adolescent's resilient behaviour is thus dependent on these adults' observable behaviour and their resilience.

Although communities and community members can exert both powerful positive and negative influences on children, families assume some level of precedence because they are temporally prior and more proximal to the child (Luthar & Zelazo, 2003:529). Since a child spends more time in the care of his or her family, the family's influence over the child will be greater than that of other adults in a child's life.

2.5 Risk factors

In addition to the identified protective factors, there are also risk factors that threaten healthy development and positive adaptational outcomes. Fraser and Richman (2001:2) define risk as the presence of one or more factors or influences that increase the probability of a negative outcome for a child or youth. Consequently, risk factors increase the likelihood of a child's being non-resilient. Since children tend to experience many risk and recurring stressors, focusing on a single risk factor does not address the reality of most children's lives (Sameroff, Gutman & Peck, 2003:366).

The presence of certain risk factors does not necessarily imply that the individual will have negative outcomes or be non-resilient. Werner and Smith (1992:87-113) states that a risk factor, whether from an internal or external source, is a probability and not a certainty. Therefore a high incidence of risk factors does not predispose an adolescent towards being non-resilient.

While it appears that a multitude of risk factors experienced by a child would result in the child's being considered as "at risk" or "vulnerable", the fact that some children thrive in the face of adversity should be considered. Bronfenbrenner (1979:844-850) noted that multiple settings and systems must be examined simultaneously since risk factors tend to cluster in the same individuals. For instance individuals who come from poor socioeconomic households often experience more risk factors than those where low income is the only factor.

Risk factors, like the protective factors, also occur at three systemic levels, namely: Individual characteristics, family factors and social support networks.

2.5.1 Individual characteristics

Before an individual becomes a functioning part of a family or social system, there are certain prenatal, perinatal and postnatal risks that he or she can be exposed to. Complications during pregnancy, premature birth, anoxia or brain damage adversely affect an individual's capacity for resilience. In addition, there are certain developmental factors that also place children at risk (Smith & Carlson, 1997:231-256; Werner & Smith, 1982:15-289). These factors include:

- serious/chronic illness such as diabetes or cancer
- neurodevelopmental delays and disorders such as cognitive impairment, attention-deficit/hyperactivity disorder (ADHD), autism, and learning disabilities
- an impulsive, risk-taking, shy or anxious nature
- a difficult temperament characterised by irritability, fussiness, negative mood, inflexibility, and high intensity reactions
- prolonged separation from the caregiver in the first year of life

2.5.2. Family factors

The family context can be a significant risk factor to human development. It is well documented that children who, at an early age, are exposed to hostile, stressful, and aversive family experiences are at elevated risk of developing adjustment problems.

Steyn (2006:1-181), Smith and Carlson (1997:231-256), Luthar (2003:1-574) and Ungar (2005:1-27) describe aversive family experiences as:

- severe family conflict (including interparental conflict)
- exposure to violence/abuse
- psychopathology (including maternal depression and parental deviance)
- parental substance abuse
- unsafe neighbourhood
- marital discord, separation and divorce
- parenting style (including authoritarian, non-responsive, permissive child-rearing practices and poor child supervision)
- insecure attachment and poor family communication
- large family size and overcrowded homes
- social isolation and frequent changes in residence
- poverty/low socioeconomic status

Low socioeconomic status is one of the most debilitating risk factors associated with negative outcomes in all stages of life. Poverty involves far more than a simple economic variable. There are also severe financial, structural, social and psychological repercussions (Seidmann & Pedersen, 2003:324). The effects of low socioeconomic status are thus far-reaching and the associated stress can jeopardise children's growth, development, safety and security. Interestingly, Fotso, Harding and Ezeh (2009:175-182) found that vulnerability to non-resilient behaviour was associated more with poverty than with orphanhood.

Poverty does not occur in a vacuum but encompasses a vast set of environmental risks which include: lower parental education, single parenthood, mental health problems and various stressful life events (Sameroff & Seifer, 1995:233-253). In addition, children do not have access to either the basic needs such as food, shelter and housing, or basic amenities such as running water, health care and sanitary ablution facilities. Due to the lack of fulfilment of these basic needs, poverty is strongly correlated with poor academic performance (Dass-Brailsford, 2005:575).

2.5.3 Social support networks

Ecological and contextual factors may also be conceptualised as risk factors. These risk factors may be present in the school, with peers or in society at large.

In the South African context particularly, pandemics such as HIV/AIDS, illnesses (for instance tuberculosis), poverty and high levels of violence, take their toll on both familial and individual wellbeing and are major risk factors associated with negative outcomes and vulnerability (Steyn, 2006:41). Social support networks in which risks operate include the school, the peer group and the larger society. These social systems will be discussed in greater detail in sections 2.5.3.1, 2.5.3.2 and 2.5.3.3.

2.5.3.1 Risk factors associated with school

Deficits in the school environment contribute towards adolescents being considered "at risk".

Firstly, an impoverished school culture is counterproductive to developing resilient behaviour (Ellis, 2010:8; Steyn, 2006:41). Without adequate teaching resources such as textbooks, equipment, lesson plans and teachers, an adolescent is prone to underachieve despite being capable of high achievement. As a result the adolescent may develop a poor self-concept (see section 2.4.1.3.1) which will hinder his or her ability to behave resiliently.

Secondly, negative relationships with teachers hinder the adolescent's potential to develop resilience (Ellis, 2010:8; Steyn, 2006:41). Since a teacher forms part of the adolescent's social support network, the presence of conflict will result in the adolescent's feeling vulnerable and misunderstood. In view of this, a teacher's style of teaching may prove beneficial to an adolescent's resilience.

A rigid, undemocratic teaching style and the lack of challenging, experiential learning do not foster resilience nor do they support the scholastic motivation and achievement of the child (Rayneri, Gerber & Wiley, 2006:112).

2.5.3.2 The peer group

The dominant role that the peer group plays in an adolescent's life is common knowledge. The immense influence of the peer group during adolescence may even eclipse the influence of caregivers and educators in an adolescent's life.

A prominent feature of adolescence is the presence of peer group pressure. While conforming to certain peer-prescribed guidelines is inevitable during adolescence, excessive conformity can adversely affect an adolescent's ability to behave resiliently. Excessive conformity could have a negative influence on an adolescent's development of autonomy and ability to make independent decisions (Louw, Louw & Van Ede, 1998:453) and will therefore inhibit the adolescent's ability to behave resiliently. A resilient adolescent, on the other hand, communicates and interacts constructively with peers and is able to make autonomous decisions (Pressley & McCormick, 2007:311-336).

In addition to peer pressure, the type of peers with whom the adolescent associates has an effect on his or her resilience.

Luthar, D'Avanzo and Hites (2003:108) found affiliation with deviant peers and the subsequent risky behaviour (for instance drug and alcohol abuse) to have a negative bearing on the resilience of an adolescent. In addition, negative peer behaviour has been found to be associated with overall poor psychological functioning (Cappella & Weinstein, 2001:759).

2.5.3.3 Societal risk factors

South African society is fraught with unique contextual risk factors. One of the most important issues facing post-democratic South Africa is the impact of poverty on a substantial portion of its citizens. There is a consensus amongst most economic and political analysts that approximately 40 per cent of South Africans are living in poverty – with the poorest 15 per cent in a desperate struggle to survive (Landman, 2003:1)

The fact of poverty has a huge impact on the individuals who experience it. Some of the societal risk factors associated with poverty include: resource-poor rural areas; high-risk urban settings; inadequate health care and subsequent high mortality rate; high unemployment rate; child-headed households (Cook & du Toit, 2005:258; Theron & Theron, 2010:7).

In addition to poverty, another societal risk factor is the prevalence of HIV/AIDS in South Africa. In 2011, 10.6 per cent of South Africans were diagnosed with HIV/AIDS (Statssa, 2011:6).

Apart from the stigma surrounding the disease, the incidence of HIV/AIDS has also increased South Africa's mortality rate and has left many orphans and teenage parents in its wake.

2.6 Measuring resilience

Resilience as a construct has been measured in a variety of ways. As a result, many alternative measurement scales have been developed for use in clinical and general populations. To date, according to Windle, Bennett and Noyes (2011:1-18) there is no "gold standard" for measuring resilience. A number of measures exist to quantify what is regarded as resilient behaviour in children, adolescents and adults.

Some of the instruments for measuring resilience in adolescents specifically are the following: the Resiliency Scale for Children and Adolescents, the Resiliency Scale for Adolescents, the Child and Youth Resilience Measure and Resilience Indices. These measures will be discussed in sections 2.6.1 to 2.6.4.

2.6.1 The Resiliency Scales for Children and Adolescents (RSCA)

The RCSA consists of 64 five-point Likert items categorised into three scales, each with its own subscale. (Prince-Embury, 2010:303). The three scales include the Sense of Mastery Scale (three subscales: optimism, self-efficacy and adaptability), Sense of Relatedness Scale (four subscales: trust, support comfort and tolerance) and Emotional Reactivity Scale (three subscales: sensitivity, recovery and impairment).

The RCSA does not cover family or external resources which may have an impact on the resilience of the adolescent.

2.6.2 The Resilience Scale for Adolescents (READ)

Hjemdal, Friborg, Stiles, Martinussen and Rosenvinge (2006:84-96) initially developed a Resilience Scale for Adults (RSA) which they later expanded for adolescents, calling it the Resilience Scale for Adolescents (READ). The READ consists of 39 items. It measures five factors, namely: personal competence, social competence, family cohesion, structured style and social resources.

2.6.3 The Child and Youth Resilience Measure (CYRM)

Ungar, Liebenberg, Boothroyd, Kwong, Lee, Leblanc, Duqued and Makhnach (2008:166-180) identified a need to examine resilience across different cultures and thus developed the Child and Youth Resilience Measure. The measure consists of 28 five-point Likert items which measure four domains, namely individual, relational, community and cultural scales. The instrument was standardised across eleven countries in eleven different languages. The authors did however note difficulties in identifying a single 'standard' measure of resilience across different cultures and contexts (Windle, Bennett & Noyes, 2011:10).

2.6.4 The Resilience Indices (RI)

The Resilience Indices (RI) developed by Ali, Dwyer, Lopez and Vanner (2010:2161-2176) was developed to examine factors associated with risk and vulnerability on personal, family and community levels. The indices measure how each of the personal, family and community levels contributes to overall resilience, with an exploratory factor analysis.

Ideally, measures of resilience should reflect the complexity and multidimensionality of the concept. Resilience is not a static trait and is therefore not an adolescent quality that is always present in every situation. The dynamic nature of resilience means that resilience may be content and context specific. An adolescent may be resilient in the

face of one type of risk but may not be able to overcome other types of risk (Fergus & Zimmerman, 2005:405). For example, an adolescent may display resilient behaviour individually but not within his or her family system. It is thus important to measure resilience across all the respective systemic levels, as discussed in section 2.4.

The READ, CYRM and RI all measure resilience within individual, family and community contexts with the exception of the RCSA which measures resilience only on an individual level.

However, all four measures fail to include the school context in their measures of resilience. The educational context is an important source of both risk and protective factors and should therefore not be excluded from an adequate measure of resilience.

Windle et al., (2011:1) add that all the measures had some missing information regarding psychometric properties. As each of the scales is in the early stages of development and requires further validation work, the conceptual and theoretical adequacy of the scales is questionable.

2.7 Changing of resilience

According to Seligmann (2011:1) 30 years of research suggests that resilience can be measured and developed.

Since resilience is considered a relatively new concept, initial research focused on information in order to determine what behaviour can be regarded as resilient. Recently, a large body of information regarding resilience has been gathered. This accumulative research on resilience has changed the nature of the framework, goals, assessments, strategies and evaluations in the field of prevention and treatment (Luthar et al., 2000:560-562). Current goals for researchers include promoting competence and preventing risk, using strategies such as enhancement of assets, reduction of risk, and facilitating protective processes (Masten, 2001:234). Snyder, Lopez and Shane (2002:85) identified three strategies for intervention suggested by the body of resilience research, namely: risk-focused strategies, asset-focused strategies and process-focused strategies. These strategies will be discussed in

sections 2.7.1 to 2.7.3. The most comprehensive programme incorporates all three strategies.

2.7.1 Risk-focused strategies

As the name suggests, risk-focused strategies are aimed at preventing and reducing risk and stressors as well as minimising exposure to current threats. These strategies are aimed at not only the members of the community on the small scale, but also at the community at large.

Examples of risk-focused strategies include community programmes to reduce teenage drinking, smoking and drug use, as well as promoting violence prevention. These programmes also highlight parental care and the prevention of child abuse (Snyder et al., 2002:84).

2.7.2 Asset-focused strategies

These strategies are geared to increasing and improving the number of social resources available to an individual. Snyder et al., (2002:84) differentiate between direct and indirect assets. Direct assets imply close proximal contact to an asset such as a tutor. Indirect assets refer to strengthening the social/financial resources in the individual's life with programmes aimed at the improvement of teacher training, parent literacy and parenting skills.

2.7.3 Process-focused strategies

These strategies aim to mobilise the fundamental protective systems for the development of resilience (Snyder et al., 2002:85). Process-focused strategies attempt to influence the processes that will change an individual's life instead of removing risk or accumulating assets. Process-focused strategies intervene on both individual and social levels. Individual programmes are designed to build self-efficacy and coping strategies. Social intervention includes nurturing mentor relationships, encouraging friendship with prosocial peers and fostering secure relationships between parents and their children.

A recent trend in the field of resilience entails not only bouncing back from adversity but rather, thriving because of it. The term for thriving after an adversity is referred to as *resilient reintegration*. Richardson (2002:307-321) proposed a resiliency model that illustrates four types of reintegration responses after a disruption.
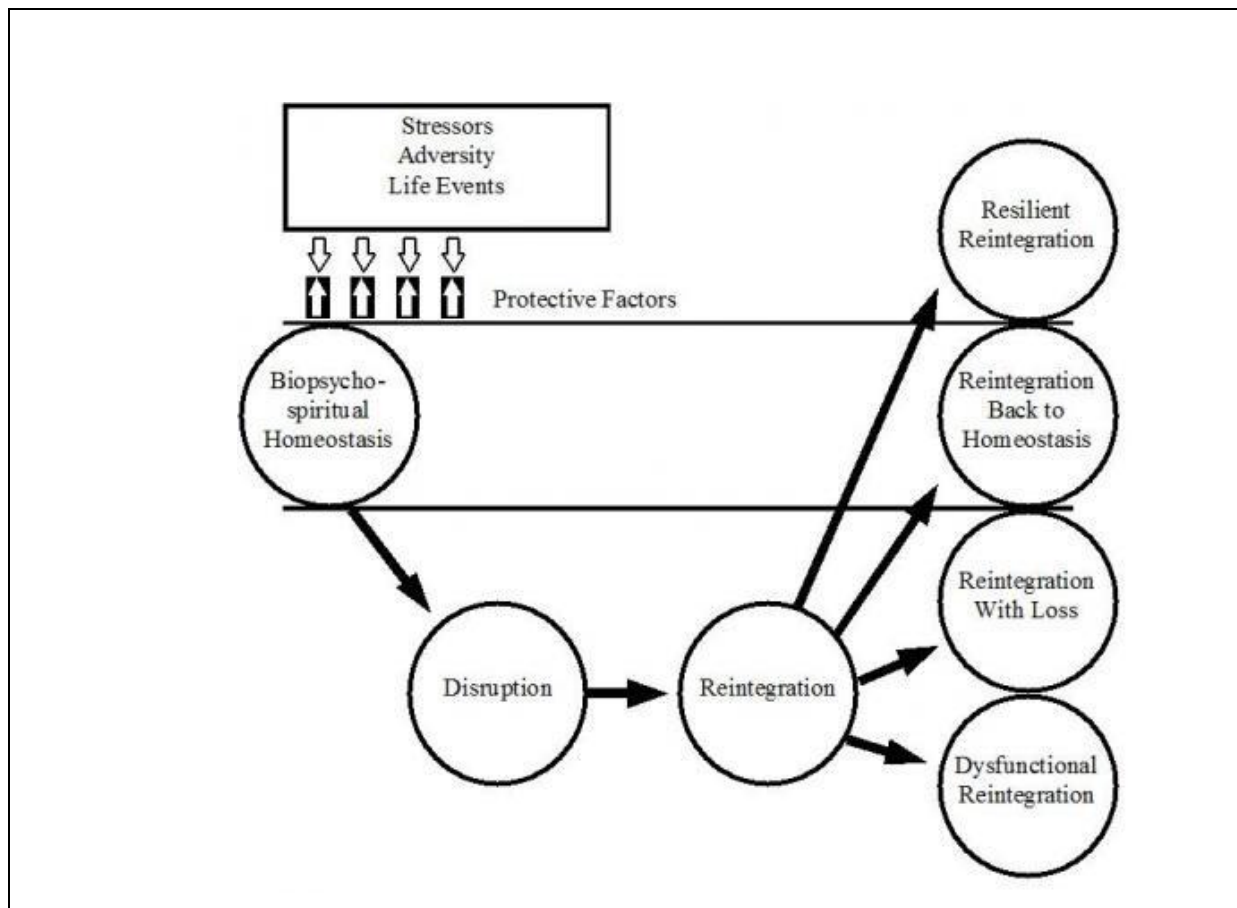
Figure 2: Richardson's resiliency model

An individual can attain one of four levels of reintegration after a disruption, namely dysfunctional reintegration, reintegration with loss, reintegration back to original homeostasis and resilient reintegration. In the case of dysfunctional reintegration as well as reintegration with loss, individuals will not return to functioning as they did before the exposure to the adversity. Reintegration back to homeostasis assists individuals to return to normal functioning after having experienced adversity. However, the individuals will not show any forms of improvement after the exposure to adversity despite their returning to normal functioning. Resilient reintegration on the other hand, implies that such individuals not only fully recover from disruption or

adversity but develop as a result and reach an accelerated level of functioning and performance.

Resilience research confirms that all humans have the potential and capacity to be resilient. There are specific resilience-building tools which can be applied and developed amongst individuals and teams (Warner, 2009:55).

Many resilience initiatives and programmes have been implemented, especially in the business sector (Seligman, 2011:1-3). Seligman (2011:1) mentions that even the US army is currently using the concept of resilience to test a programme called the Comprehensive Soldier Fitness (CSF), aimed at making soldiers as psychologically fit as they are physically fit.

The implications of the broad conceptualisation of resilience and the multitude of resilience measures mean that there is no prescriptive way for people to be resilient. It must also be kept in mind that different personality styles, ages, individual strengths and cultural differences will also influence resilient behaviour (Newman, 2003:14). The South African context is particularly riddled with challenges. While some studies have focused on the African child (Donald et al., 2000; Ramphele 1993:1-152) there is still a dearth of research examining the social construct of resilience in South African settings.

2.8 Conclusion

The review of the literature highlights several key themes important to the current study. While initial studies of resilience focused on identifying protective factors, more recent trends in resilience research aim to understand how these factors may lead to positive outcomes and what mechanisms are involved. In these most recent studies, resilience is conceptualised as a dynamic, context-bound transaction (Theron & Theron. 2010:2; Luthar et al., 2003:510-549). This dynamic view of resilience suggests that individual adaptation stems from interactive processes among the resilience factors within the child, family and social context. Research proposes that, in order to develop resilience, multifaceted programmes that consider factors across child, family and social arenas are needed. Yet many of the resilience programmes developed,

neglect the educational context which forms a very integral part of an adolescent's existence. This study therefore incorporates facets of the educational context, such as individual academic achievement, study methods and teacher-learner relationships, in order to understand and promote youth resilience.

It is also important to recognise the unique South African context in studies of resilient behaviour. South Africa is a country which faces its own distinctive set of challenges, particularly that of poverty. The literature shows poverty to be one of the most comprehensive risk factors in terms of adverse short-term and long term-effects.

The majority of the South African population is younger than 25 years of age and many face a daily battle to ensure that most of their basic needs are met (Steyn, 2006:15). As a result a large number of learners in South African schools fail to complete or even reach Grade 12. However, there are also a vast number of South Africans who experience the same adversity but manage to thrive despite their adverse experiences.

The study of resilient behaviour among poverty-stricken adolescents may enable better long-term outcomes through understanding and promoting children's chances of positive adaptation in the future, even if optimal environmental conditions are not necessarily possible. The focus on resilience amidst disadvantage also carries a political component because the problem of poverty is a vital aspect of the political agenda of a country (Garmezy, 1991:416-430).

Addressing the problem of poverty in itself is a complex undertaking but the study of resilient behaviour in the face of poverty may provide sufficient knowledge to influence and amplify the processes that encourage resilience in poverty-stricken adolescents.

CHAPTER 3

RESILIENCE AND ACADEMIC PERFORMANCE IN ADOLESCENTS

3.1 Introduction

In this chapter, the focus will be on the various inherent and environmental factors that influence the academic performance of adolescents. Firstly, inherent factors within the individual will be explored in order to gain an understanding of how health, cognitive abilities and affect characteristics influence an individual's academic potential. Next, the influence of the school and home environment on an individual's academic success will be discussed in order to create awareness of the role of the environmental context in academic ability. The review highlights which variables wield the greatest impact on academic performance and how they can be adjusted to improve an individual's academic trajectory. This chapter ends with a brief conclusion discussing the link between academic performance and resilience and the subsequent need for the study within a South African context.

3.2 Factors that influence academic performance in adolescence

Adolescence has typically been characterised as a tumultuous transition period in an individual's maturation because it involves the reconstitution of the balance between various aspects of human development. According to Piaget (1952:3-27) the period of adolescence is marked by the development of abstract thought. These abstract representations moderate the relations between adolescents and their environment. Factors that were unrelated during childhood may bond to form a unitary complex in adolescence while other variables that were highly correlated during childhood become partly or totally obsolete during adolescence (Rutter, 1994:125). Therefore, the factors that influence academic performance during childhood cannot necessarily be applied to adolescents.

The phenomenon of academic performance cannot be understood in terms of the individual alone. According to Bronfenbrenner's Ecological System's Theory, interactions and influences in other ecological environments such as the school, the

neighbourhood and the home, affect youth academic performance and achievement (Bronfenbrenner, 1977:513-531). Chetty (1996:5-33) describes the academic growth of a pupils as a continual two-way traffic between themselves and their context, which includes their perceptions of themselves, their parents, teachers, syllabi, school, curriculum, home environment, friends and their prejudices and myths. There are thus factors within individuals and their environment that affect academic performance. The influence of inherent individual actors, school environment, and family and household environment on academic performance will be explored in sections 3.2.1, 3.2.2 and 3.2.3 respectively.

3.2.1 Inherent individual factors

Franklin (1995:127-153) and Chow (2003:1-6) propose that educational outcomes are, to a large extent, dependent on human resources such as learner characteristics and experiences. Inherent individual factors explored in the text will include health, cognition, and affective factors (see section 3.2.2.3).

3.2.1.1 Health

Extensive research has linked good physical health with academic performance (Novello, 1992:3-15). Dilley (2009:3) identified substance abuse, chronic health conditions such as diabetes, poor nutrition, sleep deprivation, poor mental health and insufficient physical activity as health risks that may adversely influence learner achievement.

3.2.1.2 Cognitive abilities

According to Carroll (1993:3-12) cognitive ability refers to the individual's ability to think, reason and solve problems. Cognitive abilities include intelligence, aptitude, perception and attention. Intelligence and aptitude will be discussed in sections 3.2.1.2.1 and 3.2.1.2.2.

3.2.1.2.1 Intelligence

Psychologists' definitions of intelligence have varied greatly but seem to contain two universal themes, namely that intelligence comprises the ability to learn from experience and to adapt to the surrounding environment (Sternberg, 2001:298). Deka (1993:17) adds that, in the case of school children, intelligence is the ability to learn and succeed in school education. Accordingly, intelligence tests were developed to quantify the concept of intelligence and gauge how intelligent individuals were.

The very first intelligence test, the *Binet-Simon Intelligence Test* developed by Binet and his student Simon, still forms a basis for intelligence tests in use today (Kamin, 1995:290).

However, the use of intelligence tests has been both useful and detrimental in the educational setting. While intelligence test scores can predict achievement in schools and general intelligence correlates with social and occupational accomplishments, the same scores and school achievement are not highly correlated with income and success in later life.

Even Binet himself understood the limitations in using psychometric tests to measure intelligence and suggested that intelligence is shaped by an array of factors which not only transform over time but can also only be compared amongst children with similar backgrounds (Siegler, 1992:179-190).

The use of intelligence tests and the ensuing Intelligence quotient (IQ) score have resulted in a rather reductionist grasp of intelligence (Sternberg, 2001:300) in that the tests and the results they produce have become what we regard as "intelligent". Subsequently, researchers have largely dispelled the assumption that academic performance depends solely on cognitive abilities (Berg, 1990:1) and have looked toward a more holistic approach incorporating intrapsychic socio-emotional and other noncognitive factors in the educational process.

3.2.1.2.2 Aptitude

Aptitude refers to a person's innate potential to become proficient in a specific skill or to develop a specific ability, whereas intelligence is interpreted as a global measurable characteristic affecting general mental ability. Aptitude is separated into many different aspects which are more or less independent of each other (Reynolds, Livingston, Willson, 2008:9-13). In other words, while intelligence is a global measure, aptitude refers to a specific physical or mental ability such as mathematical or musical ability.

As with intelligence, studies report a significant and positive relationship between learners' aptitudes and academic achievement, although they do not always agree on the extent of the relationships.

Results from correlational research indicate that the degree of the relationship between academic achievement and aptitude vary, depending on two factors, namely (a) whether the measurement of aptitude and achievement was general or specific and (b) the age of the learners (Gonzalez-Pienda, Nunez, Gonzalez-Pumariega, Alvarez, Roces & Garcia, 2002:259). According to Detterman (1997:34), the more specific the aptitude measure, the better it will predict an individual's academic performance in that area. For example, a high score on a measure of mathematical aptitude will predict high achievement in Mathematics.

Correlational research results on the participant's age indicated that the correlation between aptitude and achievement decreased as learners advanced in their education (Neisser, Boodoo, Bouchard, Boykin, Brody & Ceci, 1996:77-101). In other words, the older the learner, the lower the correlation between their aptitude and subsequent academic achievement. Early primary school learners showed the greatest correlation between their aptitude and academic performance.

3.2.1.3 Affect characteristics

Most research that has been done on factors that influence academic achievement concentrate more on the cognitive factors while the affective factors surrounding academic achievement tend to be ignored (Sikhwari, 2004:1-13). The affective aspect

of learners should be given as much attention as the cognitive aspect since variance in academic achievement can also be related to affective variables. The affective variables such as self-concept, motivation, resilience, stress and anxiety will be explored in sections 3.2.1.3.1 to 3.2.1.3.5.

3.2.1.3.1 Self-concept

There are a number of definitions and synonyms for the term *self-concept*. In his defintion, Sternberg, (2001:365) defines self-concept as an individual's perception of himself, which may or may not be realistic or even perceived similary by others. Several synonyms of *self-concept* include *self-regard*, *self-esteem*, *self-efficacy*, *self-identity* and *self-perception* (Ahmed & Bruinsma, 2006:554).

Self-concept was traditionally viewed as a one-dimensional construct until Shavelson, Hubner and Stanton (1976:407-441) proposed a multidimensional and hierarchical model of self-concept. Shavelson et al. (1976:407-441) suggest that global self-concept consists of both an academic and a non-academic component. Global self-concept can be described as the general evaluative attitudes and feelings you have about yourself (Ahmed & Bruinsma, 2006:554). The academic component of self-concept is related to feelings or attitudes that a person has of his or her own academic abilities while the non-academic component of self-concept comprises feelings or attitudes originating from an individual's social, emotional and physical domains. The academic and non-academic components of self-concept are again divided into more specific self-concepts (see figure 3.1).
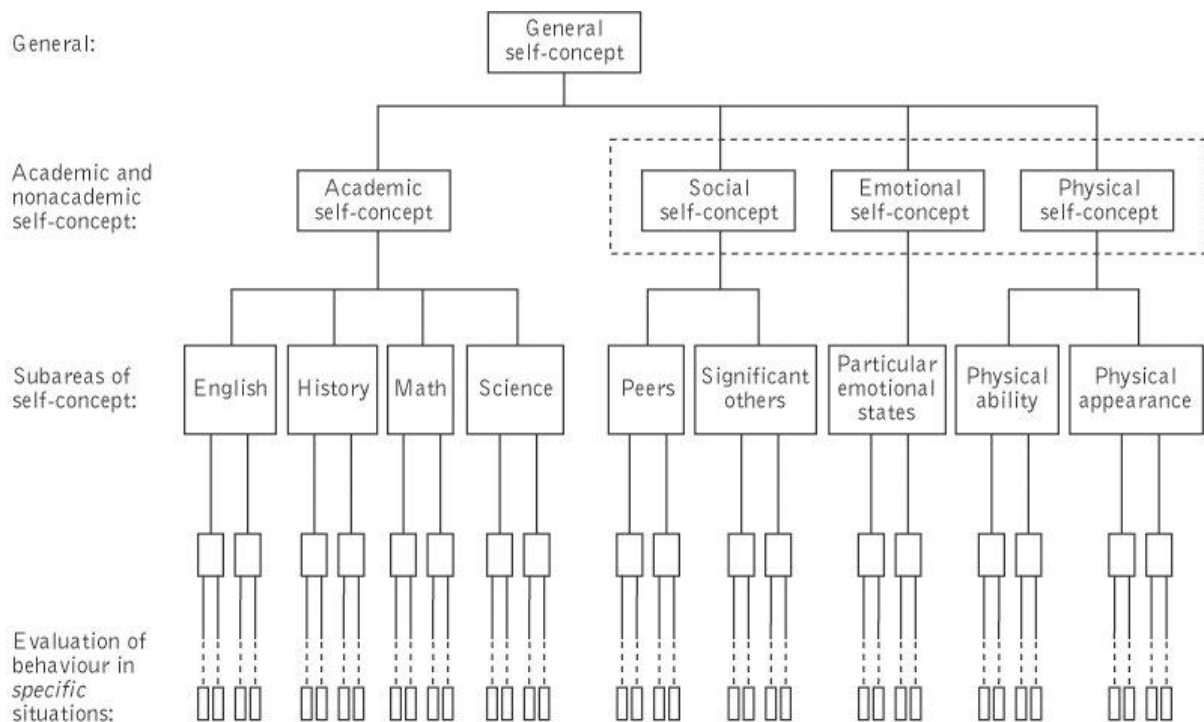
Figure 3.1. Shavelson's model of self-concept

Although global self-concept might be regarded as important for academic achievement, various studies have found academic self-concept to be a better predictor of achievement in an academic context. In fact, research shows no significant relationship between global self-concept and academic achievement while the relationship between self-concept of academic ability and academic achievement reached significance (Kumar, 2001:133; Mboya, 1986:689-696; Berg, 1990:80-103).

3.2.1.3.2 Motivation

Motivation is a significantly important factor for academic learning and achievement across childhood and through adolescence (Elliott & Dweck, 2005:8-33).In order to understand motivation in its entirety, one has to understand the different types of motivation as predictors of performance.

According to the self-determination theory of Deci and Ryan (2000:54-67), there are three types of motivation, namely *intrinsic motivation*, *extrinsic motivation* and *amotivation*.

Intrinsic motivation is defined as the drive to pursue an activity for the pleasure, satisfaction and sense of competence derived from it (Deci & Ryan, 2008:182-185). For example, a learner who is motivated to achieve academically in order to increase his or her knowledge is intrinsically motivated.

On the other hand, extrinsically motivated activities are performed for the sake of external rewards offered for the participation or completion of a task (Mnyandu, 2001:11). For example, a learner who is motivated to achieve academically in order to receive an external incentive such as money is extrinsically motivated.

Individuals who are neither intrinsically nor extrinsically motivated are amotivated. Amotivated individuals experience feelings of incompetence and a lack of personal control over the outcomes that are thought to motivate human behaviour (Ahmed & Bruinsma, 2006:556).

Both intrinsic and extrinsic motivation are essential for academic achievement. Numerous studies suggest that those with higher intrinsic motivation have been found to be more competent in school, achieve better results and have more positive perceptions of their academic competency than those with extrinsic motivation (Gottfried, Gottfried, Cook & Morris, 2005:172-186). Individuals who are intrinsically motivated are also more likely to complete a task than individuals who are extrinsically motivated. However, in a local study on 120 learners in Shoshanguve in South Africa, intrinsic motivation was not positively related to academic achievement (Mnyandu, 2001:1-155).

Deci and Ryan (2000:55) support this view by adding that many tasks which educators want their learners to perform are neither inherently interesting nor enjoyable and therefore intrinsic motivation cannot be relied on to foster learning and achievement. Since individuals are able to be both intrinsically and extrinsically motivated, it is important to find a balance between intrinsic and extrinsic motivation in task completion.

Empirical research conducted on the relationship between motivation and academic achievement suggests strong positive correlations. In a study conducted by Goodman,

Jaffer, Keresztesi, Mamdani, Mokgatle, Musariri, Pires and Schlechter (2011:373-385) significant relationships between intrinsic motivation, extrinsic motivation and academic performance were reported. Furthermore, it was found that learners' intrinsic and extrinsic motivation influenced the amount of effort they exerted in trying to achieve their desired performance outcome. Fortier, Guay and Vallerand (1995:257-274) reported Pearson correlation coefficients as high as 0.744 between academic motivation and school performance.

3.2.1.3.3 Resilience

Resilience (as defined in chapter 2, section 2.2) is about overcoming setbacks in life and refers to one's ability to cope with adversity, hardship and challenging circumstances.

Resilient behaviour not only significantly improves life outcomes for youth, but also enhances academic success, even for learners who are faced with great adversity (De Baca, 2010:1).

A large body of research reiterates the point that resilience correlates positively with academic performance. Firstly, Scales, Roehlkepartain, Neal, Kielsmeier & Benson, (2006:692-708) found that higher levels of resiliency traits are strongly correlated with higher Grade Point Averages (GPAs) in middle and high school learners. Waxman and Huang (1997:7-44) ascertained that learners who ranked in the 90th percentile on group standardised tests were highly resilient. The resilient learners reported significantly higher levels of task orientation and satisfaction, social self-concept, achievement motivation, and academic self-concept than their less resilient counterparts.

Hanson and Austin (2003:1-33) found that nearly every measure of resilience was positively related to concurrent test scores. In fact the highest increases in test scores occurred in schools where the learners reported high levels of resilience (Reyes & Jason, 1993:57-71).

Since resilience strongly relates to academic performance, increasing an individual's resilience should increase their potential for academic achievement. It is thus possible to increase academic achievement by improving resilience since the skills surrounding resilient behaviour can be learned, measured and taught (see chapter 2, section 2.7). According to De Baca (2010:3) the few programmes implemented to teach academic resilience have proven highly effective in improving academic performance. In the *Success Highways* programme implemented in Milwaukee Public Schools, researchers applied empirical and theoretical resilience research to create educator-driven assessment tools and curricula to increase and sustain all learners' academic resiliency (Solberg, Carlstrom and Kowalchuk, 2001, August). Solberg was able to establish a positive correlation between the resilience skills of learners and their academic performance (De Baca, 2010:4). Following the programme's success, *Success Highways* programme was subsequently replicated in other public schools with a large poverty-stricken learner component.

3.2.1.3.4 Stress

Throughout their lifetime, individuals are exposed to demands and challenges which will inevitably cause stress. According to the Yerkes-Dodson Law (in Teigen, 1994:525-547) human performance and stress follows a bell curve. Individuals require a certain amount of stress to reach optimal functioning and performance. However, when an energy imbalance occurs as a result of more energy being spent than gained, chronic stress emerges and symptoms such as fatigue, exhaustion, burnout and cognitive difficulties surface (Schraml, Perski, Grossi & Makower, 2012:70).

Figure 3.2: The Yerkes-Dodson human performance and stress curve

For adolescents, issues surrounding school and academic performance are a great source of stress. As demonstrated in the Yerkes-Dodson curve, a specific amount of stress allows for adolescents to feel energised, focused and thus reach optimal academic functioning which results in academic achievement. However, if an adolescent's level of stress exceeds the optimal amount, it can adversely affect their academic performance. Research shows that adolescents who experience the greatest amount of stress are incidentally those who show greater commitment to their schoolwork (Huan, Lay See, Ang & Wan Har, 2008:169-172), who tend to feel overwhelmed by their workload and consider the demands placed on them too great. Kaplan, Lui and Kaplan (2005:3-17) add that perceived stress to achieve good marks has consequences for the emotional adjustment and academic achievement of adolescents. This suggests that extremely high expectations surrounding academic achievement are counterproductive and actually prevent the adolescents involved from reaching their full academic potential. In fact, learners who experience chronic stress showed worse final grades at the end of high school than learners who perceive no stress or temporary stress (Schraml, Perski, Grossi & Makower, 2012:74)

3.2.1.3.5 Anxiety

One of the most common psychological problems endured during adolescence is anxiety (Kashani & Orvaschel, 1988:931-934).

Adolescents often experience anxiety as a result of having to cope with psychological and psychosocial changes as well as academic and career choice pressures. Covington and Omelich (1987:393) maintain that the body of research dating from the pioneering work of Yerkes and Dodson (see section 3.2.2.3.4) to the present day, has reported a negative correlation between virtually every aspect of school achievement and a wide range of anxiety measures.

According to Woolfolk (2007:387) anxiety interferes with academic achievement in regard to three aspects:

- focusing attention – anxious learners have difficulty focusing because they are dividing their attention between the new material and their preoccupation with their feeling of anxiety
- learning – even if they can maintain focus, anxious learners have difficulty cognitively organising academic material during the learning event
- testing – anxious learners often underperform on tests because they become overwhelmed during the test situation.

In addition to the cognitive context mentioned above, anxiety also has affective consequences. The affective side involves physiological and emotional reactions such as sweaty palms, nausea, diarrhoea, racing heartbeat, insomnia or fear (Pintrich & Schunk, 2002:243). Overcoming anxiety involves more than simply learning to "relax". Anxious learners need to be taught adequate learning strategies, study skills and coping mechanisms (Naveh-Benjamin, 1991:134-139).

3.2.2 The school

The factors within the school environment which have an impact on an adolescent's academic performance include the quality of instruction, teacher-learner relationship,

peer group factors and school environment. These factors will all be discussed in detail in sections 3.2.3.1 to 3.2.3.4.

3.2.2.1 Quality of instruction

Empirical findings provide convincing evidence of a strong relationship between instruction and academic achievement.

A teacher's method of instruction refers to the way a teacher delivers and teaches the curriculum material (Wilks, 1996:20). The quality of this instruction is fundamental to academic achievement because it structures the basis for learners' concept formation, learning, understanding and ability to apply concepts which will inevitably be assessed. Learners are more likely to excel academically when exposed to high quality instruction. High quality academic instruction refers to teaching that is appropriate to learners' educational levels, creates opportunity for thinking and analysis, uses feedback effectively to guide learners' thinking, and extends learners' prior knowledge (Rimm-Kauffman, 2013:4). Ballard & Bates (2008:560-580) identify practices such as differentiated instruction, data-driven instruction and identifying areas of weakness in learners as crucial to developing the quality of classroom teachers. Quint, Akey, Rappaport and Willner (2007:73-80) add that the quality of teaching instruction improves when teachers set clear expectations for their learners and are held accountable for their learners' progress. Schools where instructional quality was higher also had learners with higher academic achievement. In addition to quality instruction, teachers need to be able to effectively manage their classroom and the behaviour of their pupils for effective learning to take place.

Another central variable in instruction is time. The teacher has the responsibility to make sufficient time available for instruction to take place and for the learners to perform the relevant academic tasks with a high level of success (Wilks, 1996:26). Furthermore, greater allotted instructional time has a positive impact on a school's average academic achievement (Jez & Wassmer, 2011:4). Previous research consistently indicates that the more time learners spend engaged in learning, the higher the expected levels of academic outcomes (Borg, 1980:44-79; Brown & Saks, 1986:480-500; Cotton & Savard, 1981:1-68)

It is also important to keep in mind that academic achievement ideally requires effective instruction to be coupled with certain learner variables. Aptitude (the learner's general ability to learn), ability to understand instructions and perseverance are learner variables that, in conjunction with quality of instruction, contribute to academic achievement (Carroll, 1989:26-31).

3.2.2.2 Teacher-learner relationship

Aside from their families, learners spend the majority of their time in the presence of their teachers. The relationship between a learner and a teacher can thus play a pivotal role in academic achievement. Teachers who cultivate positive relationships with their learners create classroom environments that contribute to academic achievement as well as meeting learners' developmental and emotional needs. Positive teacher-learner relationships are characterised by positive discourse, sensitivity to learner individuality, meaningful feedback, respectful interactions and a cooperative climate.

Positive relationships with teachers support learners' adjustment to school, contribute to their social skills, promote academic performance, and promote learners' resiliency in academic performance (Battistich, Schaps & Wilson, 2004:243-262; Hamre & Pianta, 2001:949-967).

The role of the teacher learner relationship is especially influential during adolescence. For pre-school learners, family relationships are more important than teacher-learner relationships in predicting their adjustment to the pre-school environment (Pianta, Nimetz & Bennett, 1997:263-280). However, as the learner gets older, parental support and teacher-learner relationships become more complementary. During adolescence both parent and teacher supportiveness (in combination with parent and teacher monitoring and high expectations) play critical roles in predicting academic achievement (Gregory & Ripski, 2008:337-353).

Learners' relationships with their teachers have positive implications for their academic and social development. A positive learner-teacher relationship cannot predict academic achievement in itself. However, the learners who have close, positive and supportive relationships with their teachers will attain higher levels of achievement

than those learners in more conflictual relationships with their teachers (Rimm-Kauffman, 2013:1).

3.2.2.3 Peer group factors

Peer cultures are central to learners' lives. As discussed in chapter 2, section 2.5.3.2, the adolescent's peer group has an important influence on the adolescent and can even eclipse the influence of the adolescent's family.

A link between peer relationships and academic outcomes can be observed as early as primary school (Kindermann, 2007:1186). According to Woolfolk (2007:76) peer groups have a set of "rules" that apply to the individuals within their peer group. These rules could play an adverse or positive role in academic achievement, depending on the peer group's attitude towards excelling academically. For instance, an individual within a peer group may underperform academically because the peer group's "rules" do not subscribe to achieving good marks. In this way peer groups influence members' motivation and achievement in school (Ryan, 2001:1135-1150).

A peer group's attitude towards school is a significant predictor of the respective group members' academic achievement. Learners whose peers value academic achievement prioritise their academic work by finishing homework, spending more time on schoolwork, attending school regularly and not being late for class (Wang, Haertel & Walberg, 1998:199-203). The composition of the entire learner body at large also has a bearing on an individual's academic performance. If the overall learner body has similar socioeconomic statuses and high standards regarding achievement levels and attitudes towards achieving, individuals are more likely to excel academically (Rutter, 1983:1-29).

3.2.2.4 School environment

The influence of a school environment on the academic achievement of adolescents develops within a complex interplay between several variables. Apart from the variables such as the quality of instruction, teacher-learner relationship and peer group

factors which were discussed in 3.2.3.1, 3.2.3.2 and 3.2.3.3 respectively, there are also other factors involved in the school context.

A controversial variable regarding school environment is the type of school (i.e. public or private) that the adolescent attends. Research shows that parents who send their children to schools with characteristics associated with high achievement (i.e. private schools) may themselves be more supportive, intelligent and have higher academic expectations than parents with children in public schools (Coon, Carey, Fulker & DeFries, 1993:79-104). However, the reality of the South African education system is that the majority of parents cannot afford the exorbitant costs associated with private school education and this does not necessarily reflect on their intelligence or academic expectations.

Another achievement-related variable of the school environment is school culture or ethos. Schools, through their policies and practices, can create a culture of academic achievement by emphasising improvement and intellectual development *(task mastery goals),* or social comparison and competition among learners *(relative ability goals) (*Roeser, Midgley & Urdan, 1996:409). However, if the school ethos emphasises achievement but the learners do not feel that they are receiving the support they need, they will not achieve academically. Learners are more likely to excel academically if they perceive both the classroom and the school as a whole, as being related to their self-perceptions, effort, and persistence (Midgley, Anderman & Hicks, 1995:90-113).

3.2.3 Family and household environment

Factors within the family and household environment that influence academic achievement include family dynamics and socioeconomic status, which will be discussed at length in sections 3.2.2.1 and 3.2.2.2.

3.2.3.1 Family dynamics

Since the family is the first source of information for children, its resulting influence is paramount (Sumari, Hussin, Siraj & 2010:18). The dynamics that exist within the family

encompass a number of facets of a family's interactions and transactions, which can assert a positive or negative influence on the adolescent's academic achievement.

Among the consistent predictors of adolescent academic achievement and social adjustment are the parental expectations surrounding the child's academic attainment. Previous research suggested that the academic expectations of parents for their children influence their children's personal academic expectations (Trusty, 1998:260-270). Parents of high-achieving learners seem to set higher standards for their children's educational activities than parents of low-achieving learners.

Adolescent academic performance is also related to the quality of the relationship between individual adolescents and their parents as well as to the extent of parental involvement in the relationship (Christenson, 1992:178-206).

In schools where learner achievement was reported, Hara and Burke (1998:219) found that parent involvement was a significant factor in both accelerated and sustained learner academic performance. Parental interactions that are emotionally supportive and responsive, manifest involvement in the youth's academic life, and provide cognitive stimulating materials and experiences, have predicted better academic outcomes for children and adolescents (Eamon, 2005:166).Therefore, in order to be successful academically, adolescents and young adults need trusting, supporting and caring relationships with their families.

3.2.3.2 Socioeconomic status

 Parsons, Hinson and Sardo-Brown (2001:193) described socioeconomic status (SES) as people's relative position in society in terms of indicators such as family income, political power, educational background and occupational prestige. People are grouped according to these indicators and placed into one of three socioeconomic classes or categories: the group with tertiary education, better jobs, higher income and social status in society is categorised as upper class, the group with relatively lower income, basic education and less social status than the upper class is categorised as middle class, while the group which is lowest on income, status and education indicators is known as lower class (Akhtar & Niazi 2011:956).

The socioeconomic status of a child's parents has always been one of the most compelling predictors of the child's academic achievement and educational attainment (Reardon, 2011:8-22). Research indicates that children from upper class homes are more likely to achieve academically because of the numerous resources afforded to them. Children from upper class homes have better access to sources of information such as radio, newspapers, internet, television, libraries and other resources that stimulate learning. Conversely, children from lower class homes performed poorly in school because their parents could not afford the required texts and other necessary resources that fostered learning at home and school (Fan, 2012:99). Apart from resources available, the attitudes of parents from upper socioeconomic classes can also influence a child's academic achievement. Parents of high socioeconomic status value education greatly and place more emphasis on academic achievement than their less affluent counterparts do (Duncan, Featherman & Duncan, 1992:72-85).

In addition to limited resources and indifferent parental attitudes, children from lower class homes are also less likely to attain good academic results by reason of their diet. Ngwu (2000:484) found that malnutrition which is associated with lower class socioeconomic status, affected children's ability to concentrate during class and consequently their academic performance. Esu (2000:22-25) adds that a poor diet can hinder children's growth and rate of development, thereby negatively affecting their academic achievement.

3.4 Conclusion

According to the research, there are a number of inherent individual and environmental factors that influence individuals' ability to achieve good academic results. Although there is no prescriptive formula for academic success, individuals' environments have a substantial impact on their unique ability to realise their academic potential. Abraham Maslow (1943:378) in his work, *A theory of human motivation*, stated that, if "dominated by physiological needs, all other needs may be pushed into the background". Therefore, individuals' need for food, water, rest and homeostasis must be met before such individuals will be able to function further and ultimately achieve academically. Individuals who possess the innate potential to achieve good academic results may not be able to do so if their basic needs have not been met.

This theory is of significance in the South African context where structural deprivation, unemployment, and underdevelopment exist in the previously disadvantaged communities (Normand, 2007:12). The resulting social and political setting that many South African children are raised in is one of poverty, conflict and adversity in which their basic needs are neglected. Living in poverty has been associated with many negative outcomes, one of which is poor academic achievement. This is because the main focus for those who live in poverty is on survival, and academic achievement may not necessarily be a priority.

However there are still individuals who excel academically despite enduring adversity and poverty-stricken circumstances. These individuals can be referred to as resilient since they are able to thrive in spite of the burden of their environmental constraints. Academic achievement is therefore an important indicator of resilient behaviour because it is viewed as the accomplishment of a developmental task (Dass-Brailford, 2005:575). The incidence of resilient behaviour in an educational context has important implications. The study of the resilient behaviour that some poverty-stricken individual's exhibit, may enable others who endure similar poverty-stricken circumstances to improve their long-term academic outcomes. Understanding the processes involved in the demonstration of resilient behaviour could provide the basis for programme design aimed at combating the cycle of poverty, poor academic achievement and poor future prospects.

CHAPTER 4

RESEARCH DESIGN OF THE EMPIRICAL INVESTIGATION

4.1 Introduction

In this chapter the research design of the study will be explored. As was discussed in chapter 1 (section 1.3) the aim of the study is, firstly, to investigate the influence of additional educational support on the resilience and subsequent academic performance of adolescents in Grades 9 and 10. Secondly, the role of variables such as cognitive functioning, parental involvement, teacher-learner relationships and study methods on resilience and academic performance will be investigated.

The chapter begins with the formulation of the hypotheses based on the findings from the literature study as well as a justification for each hypothesis postulated.

In order to achieve the research aims stated above, a representative sample of Grades 9 and 10 learners was selected. Information regarding the final sample as well as the method of sample selection will be discussed in this chapter.

Appropriate instruments were used to measure the variables relevant to additional educational support, resilient behaviour and academic achievement. In order to measure resilient behaviour in an educational context, a new assessment scale had to be developed. The development of this resilience scale as well as the selection of existing measures utilised, is discussed in this chapter.

A detailed description of the procedure of the empirical investigation concludes the chapter.

4.2 Hypotheses

The following hypotheses were formed on the basis of the literature study:

4.2.1 Hypothesis 1

There is a significant difference in the average resilient behaviour between boys and girls.

Rationale

The literature study indicated differences between the resilient behaviour of males and that of females (see section 2.4.1.1). Rutter (2010:316-335) noted that males and females respond differently to adversity. Although both genders have specific strengths and weaknesses, research indicates that females are more inclined to resilient responses because they are less reactive to stressful situations than their male counterparts. While females are able to control their reactions to stress, males are more likely to act out aggressively due to their higher levels of testosterone (Taylor et al., 2000:411-429). Furthermore, females make more use of social support systems to help alleviate the impact of stressful circumstances.

4.2.2 Hypothesis 2

There is a significant difference between the resilient behaviour of the learners in a school which provides additional educational support and that of learners in a school which does not provide additional educational support.

Rationale

The literature study in section 2.4 indicated that resilient behaviour is influenced by a number of variables that exist in three categories namely:

- individual characteristics
- family factors
- social support networks which include facets of the wider environment such as the school environment.

The variables within these three categories counteract an adolescent's exposure to risk. Since these variables strengthen a person's response to stress, they are referred to as protective factors (Donald, et al., 2006:168; Fraser & Richman, 2001:4).

Within the school context a number of protective factors exist. Some of these protective factors include additional educational support in terms of the following: quality of instruction, positive teacher-learner relationships, additional instruction time, adequate teaching resources and flexible teaching styles. Theoretically, since protective factors contribute to an individual's exhibiting resilient behaviour, a school with additional protective factors in the form of educational support will probably promote more resilient responses in its learners than a school without additional educational support.

4.2.3 Hypothesis 3

There is a significant difference between the learners in a school with additional educational support and the learners in a school without additional educational support regarding teacher-learner relationships, parental involvement, cognitive development and study orientation.

Rationale

The literature study revealed the valuable impact of a quality learning context in a school (see sections 3.2.2 and 2.5.3) A quality learning context can be described as an environment where there are increased levels of support for learning (Liberante, 2012:4). A number of means are available to increase the levels of support in a school environment, namely: additional instruction time, quality of instruction, teaching style, school ethos and challenging intellectual work. Research has shown that increased levels of educational support impact positively on teacher-learner relationships, the level of parental involvement, learners' orientation towards learning as well as enhanced cognitive development of learners (Liberante, 2012:2-9; Gregory & Ripski, 2008:337-353; Wilks, 1996:26; Jez & Wassmer, 2011:4; Borg, 1980: 44-79; Brown & Saks, 1986:480-500; Cotton & Savard, 1981:1-68) Therefore, there will be a

significant difference between a school that offers additional educational support and a school that does not.

4.2.4 Hypothesis 4

There is a significant relationship between the resilient behaviour of learners and teacher-learner relationships, parental involvement, cognitive development and study methods.

Rationale

According to the literature study in sections 2.4 and 2.5, resilient behaviour is significantly related to the following:

- *Teacher-learner relationships.* Negative relationships with teachers have been found to adversely affect an adolescent's potential to develop resilience (Ellis, 2010:8; Steyn, 2006:41). On the other hand, a positive relationship between a teacher and a learner contributes towards the learner's capacity to behave resiliently.
- *Parental involvement.* The quality of the relationship between adolescents and their parents affects the adolescents' capacity to adapt positively to adversity (Werner & Smith, 1992:120-180). Children who exhibit resilient behaviour report having supportive, involved caregivers whose parenting care incorporates factors such as warmth, structure, monitoring and expectation (Wyman, 2003:304; Cairns, 1996:1-219; Masten & Powell, 2003:13; Luthar & Zelazo, 2003:528).
- *Cognitive development.* Competence, good problem-solving skills and cognitive development are all skills associated with resilient behaviour. Accordingly, research has indicated a positive correlation between resilient behaviour and cognitive development (Fergusson & Lynskey, 1996:281-292, Garmezy et al., 1984:97-111).
- *Study orientation.* Individuals who exhibit resilient behaviour report significantly higher task orientation, academic motivation and goal-setting ability than their less resilient counterparts (De Baca, 2010:1).

4.2.5 Hypothesis 5

There is a significant relationship between the resilient behaviour of learners and their academic achievement.

Rationale

The literature study in section 3.2.2.3.3 revealed a large body of research indicating strong correlations between resilient behaviour and academic achievement (De Baca, 2010:1; Scales et al., 2006: 692-708; Waxman & Huang, 1997:7-44; Hanson & Austin, 2003:1–33; Reyes & Jason, 1993:57-71). Aside from improving life outcomes, resilient behaviour also enhances an individual's academic success. Learners who possess resilient personality traits also have higher test scores and overall Grade Point Averages (GPAs).

In addition, programmes that have been implemented to teach academic resilience have proven highly effective in subsequently improving academic performance. During the implementation of The *Success Highways* programme, positive correlations were established between the resilience skills of learners and their academic performance (De Baca, 2010:4).

4.2.6 Hypothesis 6

There is a significant difference between the average achievement of learners in a school with additional educational support and that of learners in a school without additional educational support.

Rationale

According to the literature study in section 3.2.2, factors within the school environment have a significant impact on an adolescent's academic performance. Additional educational support in the form of heightened quality of instruction, positive learner-teacher relationships and additional instruction time all contribute to academic achievement.

Learners are more likely to excel academically when exposed to high quality instruction (see section 3.2.3.1).The way in which a teacher delivers and teaches curriculum material, sets expectations for learners and holds learners accountable, contributes to the quality of instruction (Wilks, 1996:20; Rimm-Kauffman, 2013:4; Ballard & Bates, 2008:560-580; Quint et al., 2007:73-80). Schools where instructional quality is superior also yield higher academic results.

The relationship between learner and teacher can play a pivotal role in academic achievement. Positive teacher-learner relationships (section 3.2.3.2) promote both academic achievement and the inclination to behave resiliently in academic performance (Battistich et al., 2004:243-262; Hamre & Pianta, 2001:949-967).

Another variable that contributes to academic achievement is that of additional instructional time (see section 3.2.3.1). Increased instruction time is associated with heightened academic achievement since research suggests that the more time learners spend engaged in learning, the greater their expected academic outcomes are (Jez & Wassmer, 2011:4; Borg, 1980: 44-79; Brown & Saks, 1986:480-500; Cotton & Savard, 1981:1-68).

4.2.7 Hypothesis 7

The proportion of variance in achievement explained by resilient behaviour and variables related to additional educational support (such as teacher-learner relationships, parental involvement, cognitive development and study methods) is greater than the proportion explained by any of the variables on their own.

Rationale

From the literature study, it was found that the phenomenon of academic achievement occurs as a result of the input of multiple variables (see section 3.2). An individual is more likely to succeed academically as a result of a combination of these variables than as a result of the variables in isolation. Chetty (1996:5-33) describes academic achievement as the result of continual two-way traffic between individuals and their context, which includes their perceptions of themselves, their parents, teachers,

syllabi, school, curricular, home environment, friends and their prejudices and myths. Although there is no prescriptive formula for academic success, individuals' potential to achieve good academic results is improved if they have input from multiple variables within themselves and their environment.

4.3 Research design

The research design that was used to test the stated hypotheses will be discussed below. The discussion includes a description of the sample, measuring instruments used and the research procedure followed.

4.3.1 Sample

In view of the hypotheses listed above, participants were drawn from two different high schools. For practical reasons, the schools selected were situated in the Gauteng province. The parameters for the sample of the two schools were as follows:

School One is a privately funded coeducational school situated in a poverty-stricken context. The school allows for additional educational support in terms of the following:

- *Heightened quality of instruction.* Teachers are obliged to attend ongoing further teacher training. In addition, the school management team regularly conducts classroom visits and provides the teacher with feedback regarding instruction and classroom management.
- *Extra tuition time.* The school day commences at 7:30 and ends at 16:30. There are also compulsory Saturday classes from 9:00 to 12:00.
- *Emphasis on parental involvement.* Attendance at parents' evenings is compulsory. Reports are only issued once the class teacher has had a meeting with each respective parent. If the parents neglect to come to the school, a home visit is conducted.

School Two is a middle-class former Model C coeducational government school. Teachers are employed by the Gauteng Department of Education or the school governing body. Once registered with the South African Council of Educators (SACE),

any further training is optional. The school day commences at 7:30 and ends at 14:00. While parental involvement is encouraged, it is not compulsory.

The researcher personally approached the principals of both schools to take part in the study. Since *School One* had recently been opened and consisted of only Grades 9 and 10 classes, the sample was drawn from Grades 9 and 10 classes in both schools.

Participation in the study was based on informed consent. The learners were informed about the study and participated voluntarily. They were also free to withdraw from the study at any time. The final sample consisted of the learners who provided parental consent and learner assent forms. The final sample from the Grades 9 and 10 classes in each school was divided into a group of no more than 20 participants for the completion of the questionnaire.

Although 120 learners took part in the study (30 from Grade 9 and 30 from Grade 10 in two schools), the final number of participants used for the data analysis was 117. This was because 3 learners did not adhere to instructions and failed to complete a section of the questionnaire conclusively. The average age of the participants was 15 years. The final sample consisted of 72 females and 45 males. The total number of respondents in Grade 9 was 58; and 59 in Grade 10.

The distribution of participants in terms of Grades is given in Table 4.1. In terms of gender, it is given in Table 4.2 and, in terms of age, it is given in Table 4.3.

Table 4.1 Distribution of sample in terms of Grade

School	School 1	School 2	Total
Grade 9	30	28	58
Grade 10	32	27	59
Total	62	55	117

Table 4.2 Distribution of sample in terms of gender

Grade	School 1		School 2		Total
	Male	Female	Male	Female	
Grade 9	10	20	11	17	58
Grade 10	13	19	11	16	59
Total	23	39	22	33	117

Table 4.3 Distribution of sample in terms of age

	Number of learners	Mean age	Standard deviation
School 1	62	15.3064515	0.8605890
School 2	55	15.3636364	0.8468599
Total	117	15.3333333	0.8509629

4.3.2 Measuring instruments used

A range of tests was used in this study since several variables had to be measured. A questionnaire comprising several measuring instruments was developed. The questionnaire was divided as follows:

Section	**Content**
Section A	Biographical details
Section B	Resilience Teacher-learner relationships
Section C	Parental involvement
Section D	Cognitive development
Section E	Study orientation
Section F	Academic achievement

The various measuring instruments will be discussed in detail below.

4.3.2.1 Resilience

Although numerous questionnaires have been developed to measure resilience, none have been designed for use in an educational context specifically related to academic performance. A new questionnaire was thus developed, based on the concepts in the literature study relating to the features of resilient behaviour (c.f. Addendum A). For ethical reasons, only the newly developed resilience questionnaire will appear in the addendum (c.f. Addendum B).

The questionnaire consists of 36 items. The following are examples of items in the questionnaire:

"I am proud of who I am at school." (sense of pride)

"I do not pretend to be someone else around my peers." (self-awareness)

"I know how to handle various school stressors." (coping skills)

The sequence of the items was mixed so that the respondents were not aware of the construct being measured since this knowledge might affect their responses. The learners were required to respond on the six-point interval scale below:

Answer the following statements by awarding yourself a number between 1 and 6. Write this number in the block next to the statement.
This is exactly how   I experience it   6 5 4 3 2 1   This is not at all how   I experience it
Remember it is how you think about yourself and not how others judge you.

The reliability of the resilience questionnaire will be discussed in chapter 5.

4.3.2.2 Teacher-learner relationships

A questionnaire developed for measuring the affective factors that exist in learners participating in the performing arts in a secondary school context was utilised (Bester, 2003:186). The affective factors measured in the questionnaire included the relationship between teacher and learners as well as learners' levels of anxiety, stress, motivation and self-concept. Only the teacher-learner relationship items were selected from the questionnaire and the wording was translated and adapted from a performing arts context into a general educational context. For example, one of the original items read:

"My musiekonderwyser laat my veilig en op my gemak voel."

The item was translated and adapted to:

"Teachers make me feel safe and at ease."

The sequence of the items was mixed so that the respondents were not aware of the construct being measured since this knowledge might affect their responses. The items are answered on a six-point scale so that a greater range of responses could be obtained, thereby increasing the reliability. A high score on an item indicates a good teacher-learner relationship.

The reliability index of the original questionnaire was obtained by calculating Cronbach's Alpha reliability coefficient for the item dealing with the construct of teacher-learner relationships. A reliability coefficient of 0,924 was obtained.

4.3.2.3 Parental involvement

A questionnaire developed by Bester (1994:1–20) to ascertain parent involvement was utilised. The parent involvement questionnaire formed part of an unpublished research report titled "Faktore wat verband hou met die akademiese prestasie van PRO ARTE-leerlinge" with a sample of 285 high school learners.

The questionnaire consists of 10 items. An example of one of the items on the questionnaire was: "My parents often ask about my school activities." The learners

were required to respond on a six-point interval scale. A reliability coefficient of 0,71 was obtained, making the questionnaire a reliable measure.

4.3.2.4 Cognitive development

Cognitive development is measured using the Group Assessment of Logical Thinking (GALT). The GALT was developed by Roadrangka, Yeany and Padilla in 1982 through the University of Georgia as a measure of critical thinking skills. The test was initially developed with 23 items but was reduced to 12 items in 1983 (Cotter & Tally, 2009:3-14). Roadrangka (1991:149) describes the characteristics of the GALT as follows:

1. It is a paper-and-pencil test that measures six logical operations: conservation, proportional reasoning, controlling variables, combinatorial reasoning, probabilistic reasoning and correlational reasoning.
2. The test is set in multiple-choice format with justifications for each answer.
3. The test possesses illustrated representations for each of the 12 items.
4. The test is suitable for individuals with a Grade 6 and above reading level.
5. The test possesses suitable reliability and validity to distinguish between learners at a concrete, transitional or formal stage of development.
6. The test can be administered in a group context.

For 10 of the 12 items, the learner must choose the correct response as well as rationale, both of which are in multiple-choice format. For example, Item 1 gives a sketched example of two clay balls of the same size, shape and weight on a scale. In the second sketch, one of the clay balls is flattened. The learner is expected to choose the correct statement regarding the item as well as the correct reason for his or her answer:

a. The pancake shaped clay weighs more.
b. The two pieces weigh the same.
c. The ball weighs more.

Four possible reasons for the correct answer are provided:

1. You did not add or take away any clay.
2. When clay ball 2 was flattened like a pancake, it had greater area.
3. When something is flattened, it loses weight.
4. Because of its density the round ball has more clay in it.

The question is only considered correct if both the answer and rationale are answered correctly.

The final two items on the test focus on logical combinations where the learners are expected to calculate and write the number of possible combinations in a given scenario. An example of this is item 11 showing a sketch of three different flavours of ice cream with three different toppings. The learner must then provide the number of possible combinations between the ice-cream flavours and toppings available.

The test takes approximately 45 minutes to complete and is interpreted as follows:

Number of correct items (answer and rationale)	Interpretation
0-4	Concrete thinking
5-7	Transitional level of thought
8-12	Formal level of thought

The reliability of the GALT is 0,85.

4.3.2.5 Study orientation

The learners' orientation towards studying was assessed by the Survey of Study Habits and Attitudes developed by Brown and Holtzmann (1984:1). The questionnaire consists of 100 statements to which the learners respond on a five-point scale. The five responses available are:

- Rarely (0–15% of the time)
- Sometimes (16–35% of the time)
- Frequently (36–65% of the time)

- Generally (66–85% of the time)
- Always (86–100% of the time).

An example of an item is "I get nervous and confused when taking a test and fail to answer questions as well as I am capable of doing" (Brown & Holtzmann, 1984:3).

The scores on the questionnaire are grouped into four different scales, namely:

a) *Delay avoidance.* This indicates to what extent the learner completes assignments within the required time period.
b) *Work methods.* Indicates the learner's use of effective study methods.
c) *Teacher approval.* Gives an indication of the learner's attitude towards his or her teacher.
d) *Education acceptance.* Provides an indication of the learner's educational ideals and goals.

The four scales are then further grouped together. The scores on "delay avoidance" and "work methods" are combined to form a "study habits" scale. The scores on "teacher approval" and "education acceptance" are combined to form a "study attitudes" scale.

The combination of the study habits and study attitudes scales forms a global scale indicating the learners' overall study orientation.

The reliability of each subtest is provided in Table 4.4.

Table 4.4 Reliability of the SSHA

Test/Subtest	Reliability
Delay avoidance	0,85
Work methods	0,86
Teacher approval	0,87
Education acceptance	0,86
Study orientation	0,91

4.3.2.6 Academic achievement

Marks obtained at the end of the first term were taken as a measure of academic achievement. The first term academic results were selected because Grade 9 and Grade 10 final marks are weighted differently in the second and fourth terms during which examinations are written. In other words, the proportions of term work and examination marks are calculated differently between Grades 9 and 10 during terms 2 and 4. Furthermore, the ratio between examination results and term results differed between the two schools. In order to keep the academic results relatively standardised, the marks recorded were achieved from work completed during the first term. Each mark was calculated as a percentage and recorded on the questionnaire.

Performance in the following subjects was viewed as representative of academic achievement in the current study:

1. First language
2. Second language
3. Mathematics
4. Mathematical literacy
5. Physical Science
6. Accountancy
7. History/Life Science/Geography/Economics/Business Studies
8. Average

The above subjects were chosen to represent both the learners' verbal and nonverbal abilities. While first and second language subjects measure verbal components, Maths, Physical Science and Accountancy measure nonverbal numerical ability. In addition, verbal learning subjects such as History, Life Science, Geography, Economics and Business Studies were included.

4.3.3 Procedure used

4.3.3.1 Questionnaire format

The following relevant biological information was requested from each participant:

1. Gender
2. Age
3. Grade
4. Home language
5. School

The surnames and initials of the participants were requested in order to transfer the results of the SSHA and academic results onto the corresponding questionnaire.

4.3.3.2 Consent to undertake the proposed research study

The Gauteng Department of Education, the College of Education at The University of South Africa, the principals of the respective schools, and the parents/caregivers were approached by the researcher to obtain formal consent to proceed with the proposed research study.

The researcher personally invited the principals of two schools to take part in the study, namely:

a.) A former Model C government high school
b.) A privately donor funded high school in an informal settlement

After consent was obtained from the relevant school principals (c.f. Addendum C), a written request was then forwarded to the Gauteng Department of Education requesting permission for research to be undertaken at the identified government school.

Once permission from the Gauteng Department of Education was obtained, (c.f. Addendum D) an application for an ethics review and clearance was submitted to the

University of South Africa's College of Education and ethical clearance was granted (c.f. Addendum E).

An informative letter was sent home to the parents/caregivers of the respondents (c.f. Addendum F). The letter introduced the researcher, gave a description of the study and of the respondent's participation in the study. The letter also provided information regarding confidentiality, voluntary participation, termination of participation, debriefing as well as the contact details of the researcher. Parents/caregivers were requested to provide formal written consent for the learners to participate in the research study.

In addition, the learners were provided with a letter of assent providing a description of the study and of their participation in the study (c.f. Addendum G). The letter also provided information regarding confidentiality, voluntary participation, parental consent, termination of participation, debriefing as well as the contact details of the researcher. The learners were requested to provide formal written assent to participate in the research study.

4.3.3.3 Testing phase

The questionnaire was administered to the 117 respondents in groups of no more than 20 at a time. Each participant was randomly placed at a separate table. The tests were conducted in the classroom setting since this was deemed less anxiety-provoking than the school hall. The tests were administered during the school morning to avoid fatigue arising from the long testing time required. On the day of testing, the researcher was assisted by an educator from each of the respective schools.

The testing commenced as follows:

Sessions	Sections	Time
Session 1	Sections B and C: Resilience, teacher Learner relationships and parental involvement	60 minutes
Break		15 minutes

Session 2	Section D: GALT	60 minutes
Break	███████████████	15 minutes
Session 3	Survey for study habits and attitudes	60 minutes

The instructions were read aloud to the group and a breakdown of the allotted times was provided. The Group Assessment of Logical Thinking (GALT) and Survey for Study Habits and Attitudes (SSHA) completed in Sessions 2 and 3 respectively, were administered according to the procedures stipulated in the respective manuals.

4.3.3.4 Processing phase

The academic results of the participants were obtained after the first term results had been compiled for 2013. To ensure accuracy, the researcher obtained the academic results from the school and personally entered the results on the questionnaire. Data from the Survey of Study Habits and Attitudes were marked and the results were transferred onto the respective participants' questionnaire. All the data gathered were transferred onto one document and read into a computer for analysis.

Chapter 5 contains a detailed analysis of the findings of the empirical investigation.

CHAPTER 5

RESULTS AND DISCUSSION OF THE EMPIRICAL INVESTIGATION

5.1 Introduction

In chapter 4, the research design of the empirical investigation was explained. Several hypotheses were formulated relating to the influence of educational support on the resilience and academic performance of adolescents in Grades 9 and 10. In formulating the hypotheses, the role of variables such as cognitive functioning, parental involvement, teacher-learner relationships and study methods in resilience and academic performance was taken into account. In order to test the hypotheses, existing, adapted and newly developed measuring instruments were used. The existing Group Assessment of Logical Thinking (GALT) and Survey of Study Habits and Attitudes (SSHA) were used to measure cognitive development and study methods respectively. A resilience questionnaire was newly developed, based on concepts in the literature study (Addendum A). A Parental Involvement Questionnaire and Teacher-Learner Relationship Questionnaire developed by Bester (1994:1-20) and Bester (2003:186) respectively were adapted for use in a general academic context.

This chapter comprises two sections. The psychometric information relating to the newly developed resilience questionnaire will be specified and discussed in the first section. This information includes the following:

- an item analysis to identify weak items which will subsequently be omitted from the questionnaire
- the reliability coefficients of the items in the questionnaire

The second section of the chapter will deal with the testing of the hypotheses set out in chapter 4. These hypotheses relate to the variables surrounding additional educational support as well as the resilient behaviour and academic performance of adolescents. Each of the hypotheses is stated as a null hypothesis for the purpose of complying with the correct empirical technique for scientific enquiry. During the testing

of the hypotheses, significant differences and relationships between variables will be established, using the appropriate statistical analyses.

5.2 Item analysis of the resilience questionnaire

Two aspects were taken into account during the item analysis of the resilience questionnaire:

- The correlation between each item and the total is calculated. The stronger the correlation of the item with the total, the more suitable the item is. In the case of a low or negative relationship between the item and the total, omitting the item must be considered.
- The reliability of each item is calculated using an alpha coefficient. If the alpha coefficient improves when omitting an item, the item may then be omitted. If the alpha coefficient does not improve with the omission of an item, the item is retained. The final measuring instruments consist of items that have a positive correlation with the total and simultaneously offer high reliability.

Table 5.1: Reliability of the resilience questionnaire

N	117
Number of items	36
Alpha reliability coefficient	0.85

As previously discussed, the item correlation with the total and the Alpha Reliability Coefficient was taken into consideration when calculating the relevance of each item. The results can be consulted in Table 5.2.

Table 5.2: Item analysis of the resilience questionnaire

Item	Item correlation with total	Alpha if item is omitted
1	0.5672	0.8444
3	0.0553	0.8559
4	0.0342	0.8573
5	0.5061	0.8446
6	-.0249	0.8596
7	0.1762	0.8541
9	-.0565	0.8597
11	0.6207	0.8419
12	0.3839	0.8480
14	0.3226	0.8488
15	0.3079	0.8491
16	0.4255	0.8462
17	0.4944	0.8465
19	0.4021	0.8468
20	0.1769	0.8525
21	0.4239	0.8462
23	0.5765	0.8433
25	0.3819	0.8474
26	0.3308	0.8486
29	0.4750	0.8447
30	0.1330	0.8541
31	0.5635	0.8427
33	0.4317	0.8458
35	0.0953	0.8551
36	0.4835	0.8444
38	0.3789	0.8473
40	0.4287	0.8469
42	0.4893	0.8449
45	0.4349	0.8459
47	0.5317	0.8439
49	0.4854	0.8453
51	0.1206	0.8539
53	0.5230	0.8437
54	0.2643	0.8502
55	0.5198	0.8437
56	0.6122	0.8406

According to the information in Table 5.2., items 6 and 9 contributed negatively to the total of the resilience questionnaire. Furthermore, items 3, 4 and 35 showed low correlation with the total. Due to both the negative and low correlations, the abovementioned five items were omitted thereby increasing the Alpha Reliability coefficient. The reliability of the final resilience questionnaire is indicated in Table 5.3 below:

Table 5.3 Reliability of the final resilience questionnaire

N	117
Number of items	31
Alpha reliability coefficient	0.88

5.3 Testing of the hypotheses

The hypotheses formulated in chapter 4 (section 4.2.) will be tested. These hypotheses relate to the influence of educational support on the resilience and academic performance of adolescents in Grades 9 and 10.

5.3.1 Hypothesis 1

The following null hypothesis regarding Hypothesis 1 (section 4.2) was tested:

There is no significant difference in the average resilient behaviour between boys and girls.

The average scores for girls and boys on the resilience questionnaire were calculated separately. A t-test was subsequently used to ascertain whether there was a significant difference in the mean between the two groups. The results appear below in Table 5.4.

Table 5.4: Difference in the average resilience questionnaire scores between boys and girls

	Group	N	Mean	S	T	Df	P
Boys	1	45	138.0	19.06	1.37	115	p>0.05
Girls	2	72	143.2	20.69			

According to the information in Table 5.3, a t value of 1.37 with p>0.05 was obtained. Therefore the null hypothesis cannot be rejected. The results imply that the average display of resilient behaviour does not differ significantly between boys and girls. There is thus an inconsistency between the results of the current investigation and the findings in the literature study. In the literature, studies on resilient behaviour (Fergusson & Horwood, 2003:147; Taylor et al., 2000:411-429) found that females are less reactive to stress than their male counterparts and are thus are more inclined to demonstrate resilient behaviour. However, the findings in the literature study were derived from studies on resilient behaviour demonstrated by males and females in a general context, while the current investigation focuses on resilient behaviour in an educational context. The different contexts may account for the discrepancy in the findings. In addition, Rutter (2010:316-331) describes each gender as having specific strengths and weaknesses when coping with adversity, thus indicating that gender may not necessarily be a strong predictor of resilient behaviour.

5.3.2 Hypothesis 2

The null hypothesis with regard to Hypothesis 2 postulates:

There is no significant difference between the resilient behaviour of learners in a school which provides additional educational support and that of learners in a school which does not provide additional educational support.

The average scores between learners in a school with additional educational support and learners in a school without additional support on the resilience questionnaire were calculated. The t-test was subsequently used to ascertain whether the two means differ significantly. The results are shown in Table 5.5 below:

Table 5.5: Difference between the average resilience scores for learners in a school with additional educational support and those for learners in a school without additional educational support

	N	Mean	S	T	Df	p
School with additional educational support	62	147.4	17.58			
School without additional educational support	55	134.2	20.71	3.74	115	p<0.01

According to the information in Table 5.5, a t-value of 3.74 with p<0.01 was attained. Therefore, the null hypothesis can be rejected, implying that there is a significant difference between learners in a school with additional educational support and learners in a school without additional educational support with regard to resilient behaviour. The mean of the school with additional educational support was higher compared to the mean of the school without additional educational support, indicating that additional educational support contributes to learners' demonstrating resilient behaviour.

According to the literature study, additional educational support creates a productive school culture which predisposes learners to provide resilient responses to adversity, while deficits in a school environment are counterproductive in developing resilient behaviour (Ellis, 2010:8, Steyn, 2006:41). Therefore the research results and the findings in the literature study are consistent in finding that factors in the form of

educational support will promote more resilient responses in learners than would be the case in a school without additional educational support.

5.3.3 Hypothesis 3

The null hypothesis regarding Hypothesis 3 states:

There is no significant difference between learners in a school with additional educational support and learners in a school without additional educational support regarding teacher-learner relationships, parental involvement, cognitive development and study orientation.

The average scores between the learners in a school with additional educational support and learners in a school without additional support regarding teacher-learner relationships, parental involvement, cognitive development and study orientation were calculated. The t-test was then used to establish whether there was a significant difference between the mean of the two schools regarding teacher-learner relationships, parental involvement, cognitive development and study orientation. The results are shown in Table 5.6. Group 1 represents the school with additional educational support while Group 2 represents the school without additional educational support.

Table 5.6: Difference between learners in a school with additional educational support and learners in a school without additional educational support regarding teacher-learner relationships, parental involvement, cognitive development and study orientation

Variable	Group	N	Mean	S	t	Df	p
Teacher-learner relationships	1	62	80.71	12.80			
	2	55	76.51	13.04	1.76	115	p>0.05
Parental involvement	1	62	45.68	8.62	5.28	115	p<0.01
	2	55	36.49	10.20			

Cognitive development	1	62	7.35	3.01	3.11	115	p<0.01
	2	55	5.67	2.80			
Study orientation	1	62	74.63	12.90	4.81	115	p<0.01
	2	55	65.98	5.76			

According to the information in Table 5.6, for teacher-learner relationships, a t-value of 1.76 with p>0.05 was attained. The null hypothesis cannot be rejected, indicating no significant difference between the teacher-learner relationships in a school with additional educational support and a school without additional educational support. There is thus inconsistency between the research results and the literature study. While the research findings suggest that a school with additional educational support will positively influence teacher-learner relationships (Battistich et al., 2004:243-262; Hamre & Pianta, 2001:949-967), the results of the current investigation indicate that the teacher learner-relationships in a school with additional educational support and those in a school without additional educational support do not differ significantly. The additional support in the current investigation included heightened quality of instruction, extra tuition time, and higher parental involvement but did not include a specific programme to improve teacher-learner relationships. Since the additional support in the current investigation did not include superior teacher learner-relationships, it is not surprising that the research results did not indicate a significant difference between the two schools. Therefore, the literature accurately reflects the point that a school that provides additional educational support in the form of enhanced teacher-learner relationships will positively influence the relationships between teachers and learners (Battistich et al., 2004:243-262; Hamre & Pianta, 2001:949-967).

There does however appear to be a significant difference regarding parental involvement, cognitive development and study orientation between a school with additional educational support and a school without additional educational support. In each instance, the mean for the school with additional educational support was higher compared to the mean for the school without additional educational support, indicating

that learners in a school with additional educational support show higher levels of parental involvement, cognitive development and study orientation.

For parental involvement, a t- value of 5.28 with p<0.01 was calculated, indicating that the null hypothesis can be rejected. The research results suggest that parental involvement is higher in a school with additional educational support compared to a school without additional educational support. This is consistent with the findings in the literature study. In schools where additional educational support was reported, parental involvement was found to be a significantly higher than in school without additional educational support (Hara & Burke, 1998:219).

With regard to cognitive development, a t-value of 3.11 with p<0.01. The null hypothesis can thus be rejected, indicating that the cognitive development of learners is significantly higher in a school with additional educational support than in a school without additional educational support. The results are consistent with the research findings which state that increased levels of educational support impact learners' orientation towards learning and their subsequent cognitive development (Wilks, 1996:26 Jez & Wassmer, 2011:4; Borg, 1980: 44-79; Brown & Saks, 1986:480-500; Cotton & Savard, 1981:1-68)

A t-value of 4.81 with p<0.01 was calculated for study orientation. The null hypothesis can be rejected, which implies a significant difference between the study orientation of learners in a school with additional educational support and that of learners a school without additional educational support. According to the research findings, learners in a school with additional educational support indicated higher levels of orientation towards studying than learners in a school without additional educational support. Furthermore, the research findings and results are consistent in that both indicate that cognitive development is greater in a school that offers additional educational support (Liberante, 2012:2-9; Gregory & Ripski, 2008:337-353).

5.3.4 Hypothesis 4

The null hypothesis with regard to Hypothesis 4 postulates:

There is no significant relationship between the resilient behaviour of learners and teacher-learner relationships, parental involvement, cognitive development and study methods.

In order to test the null hypothesis a Pearson product-moment correlation was calculated between resilient behaviour and teacher-learner relationships, parental involvement, cognitive development and study methods. The results can be seen in Table 5.7 below:

Table 5.7: Correlation between resilient behaviour and teacher-learner relationships, parental involvement, cognitive development and study methods

N= 117	Teacher-learner relationships	Parental involvement	Cognitive development	Study methods
Resilient behaviour	0.53*	0.45*	0.28*	0.41*

*p<0.01

Since p<0.01 was obtained for the relationship between resilient behaviour and teacher-learner relationships, parental involvement, cognitive development and study methods, the null hypothesis can be rejected. The research results thus imply that significant positive relationships exist between resilient behaviour and teacher learner-relationships, parental involvement, cognitive development and study methods. The positive correlations imply that higher resilient behaviour can be associated with higher teacher-learner relationships, parental involvement, cognitive development and study methods.

According to the information in Table 5.7, the highest correlation exists between resilient behaviour and teacher learner-relationships followed by the relationship between resilient behaviour and parental involvement. These results imply that the potential for resilient behaviour in an educational context exists as a result of the

relationships between learners, their teachers and their parents. This is consistent with the findings in the literature study which showed that a close relationship with a competent adult contributes to the resilience of an adolescent. Positive adaptation despite exposure to adversity is dependent on the quality of the relationship between adolescents and the adults in their lives (Werner & Smith, 1992:120-180). Since parents and teachers are temporally prior and more proximal to a child, their influence assumes some level of precedence (Luthar & Zelazo, 2003:529).

The lowest positive correlation according to Table 5.7 exists between resilient behaviour and cognitive development. The low correlation implies that cognitive development is not strongly associated with resilient behaviour. Learners who are more cognitively developed will not necessarily display higher levels of resilient behaviour compared to their less cognitively developed counterparts.

5.3.5 Hypothesis 5

The null hypothesis regarding Hypothesis 5 states:

There is no significant relationship between the resilient behaviour of learners and their academic achievement.

In order to test the null hypothesis stated for the relationship between resilient behaviour and academic achievement, a Pearson product-moment correlation was calculated. Both the verbal and nonverbal components of academic achievement were taken into account. Subsequently, subjects measuring performance in language (first and second languages), numerical ability (Mathematics, Science and Accounting) and verbal learning (History, Economics, Business Studies) were used. The results can be seen in Table 5.8 below:

Table 5.8: Correlation between resilient behaviour and academic achievement

N=117	First Language	Second Language	Maths	Maths Literacy	Science	Accounting	Verbal Learning subject	Average
Resilient behaviour	0.36*	0.41*	0.41*	0.19**	0.49*	0.63*	0.34*	0.44*

*p<0,01; **p>0.05

Positive correlations were obtained between resilient behaviour and academic achievement in Language, Numerical and Verbal Learning subjects. This indicates a direct relationship between resilient behaviour and academic achievement. The higher the resilient behaviour, the higher the academic achievement and vice versa, since the relationship between resilient behaviour and academic achievement is not of a causal nature. An individual who displays resilient behaviour also displays greater academic achievement.

According to the information in Table 5.8, resilient behaviour correlates most highly with Accounting, followed by Science. However, the relationship between resilient behaviour and Mathematical Literacy was found to be not significant since p>0.05.

The literature study and research results thus yield consistent findings since higher levels of resiliency traits were found to correlate with higher academic achievement (Scales et al., 2006:692-708). Hanson and Austin (2003:1-33) found that nearly every measure of resilience was positively related to concurrent test scores.

5.3.6 Hypothesis 6

The null hypothesis regarding Hypothesis 6 states:

There is no significant difference between the average achievement of learners in a school with additional educational support and that of learners in a school without additional educational support.

The average achievement of learners in a school with additional educational support and learners in a school without additional educational was calculated. The t-test was used to measure whether the two means differ significantly. The results are shown in Table 5.9.

Table 5.9: Difference in academic achievement between learners in a school with additional educational support and learners in a school without additional educational support

	Group	N	Mean	S	t	Df	p
School with additional educational support	1	61	67.23	1.26			
School without additional educational support	2	55	57.07	1.96	5.19	114	p<0.01

According to the information in Table 5.9, a t-value of 5.19 with p<0.01 was attained. Therefore, the null hypothesis can be rejected, implying that there is a significant difference between the average achievement of learners in a school with additional educational support and that of learners in a school without additional educational support. The mean of the school with additional educational support was higher than the mean of a school without additional educational support, indicating that academic achievement is higher in a school with additional educational support.

In the literature study, additional educational support was found to correlate strongly with academic achievement. Factors such as heightened quality of instruction (Wilks, 1996:20), additional instructional time (Jez & Wassmer, 2011:4), positive teacher-learner relationships (Hamre & Pianta, 2001:949-967 and supportive family parental interactions (Hara & Burke, 1998:219) predicted better academic outcomes. The

results of the current investigation and the findings in the literature study are thus consistent in finding that a school that offers additional educational support will promote higher academic achievement in its learners, compared to a school without additional educational support.

5.3.7 Hypothesis 7

The proportion of variance in achievement explained by resilient behaviour and variables related to additional educational support (such as teacher-learner relationships, parental involvement, cognitive development and study methods) is not greater than the proportion explained by any of the variables on their own.

In order to test Hypothesis 7, a stepwise forward regression analysis was carried out to determine which variables explain the largest proportion of the variance. Average academic achievement was used as the dependent variable. The following independent variables were used:

- gender
- cognitive development
- teacher-learner relationships
- parental involvement
- study methods
- additional educational support (the two schools used in the sample)
- resilient behaviour

The results of the regression analysis appear in Table 5.10.

Table 5.10: Proportion of the variance in average academic achievement as the dependent variable by different independent variables

Step	Variable	R²	F	Df	p
1	Additional educational support (schools)	0.19	26.92	1,114	p<0.01
2	Resilient behaviour	0.29	27.79	2,113	p<0.01
3	Cognitive development	0.33	18.35	3, 112	p<0.01

According to table 5.10, three independent variables, namely additional educational support, resilient behaviour and cognitive development, contributed significantly to the variance in academic achievement. Additional educational support explained the largest proportion (19%) of the variance in average academic achievement. R^2 was significant with F $(1,114) = 26.92$; $p<0.01$.

The second variable to enter into the model was resilient behaviour. Together with additional educational support, resilient behaviour explained 29 per cent of the variance in average academic achievement. Resilient behaviour thus explained 10 per cent more of the variance in average academic achievement, not already explained by additional educational support. The R^2 is significant with F $(2,113) = 26.92$; $p<0.01$.

The inclusion of the final significant variable of cognitive development resulted in change in R^2 from 0.29 to 0.33 which implies that approximately 33 per cent of the variance in average academic achievement can be jointly explained by additional educational support, resilient behaviour and cognitive development. The R^2 of 0.33 is significant with F $(3,112) = 26.92$; $p<0.01$.

No other independent variables measured in this study contributed significantly to the variance in average academic achievement.

In the literature study, several variables were found to contribute to academic achievement. The phenomenon of academic achievement is described as a continual

two-way transaction between an individual his or her context, parents, teachers, syllabi, school, curricular, home environment, friends, prejudices and myths (Chetty, 1996:5-33). Although numerous variables in this transaction are associated with academic achievement, cognitive abilities, affect (including self-concept, motivation, resilience, stress and anxiety) and school environment were found to have the strongest relationship with academic performance (Franklin, 1995:127-153; Chow, 2003:1-6; Carroll, 1993:3-12). The results of the current investigation and the findings in the literature study are thus consistent in showing that additional educational support, resilient behaviour and cognitive development are important variables which can be used to predict academic achievement.

5.4 Conclusion

In this chapter, an explanation of the results of the empirical investigation was provided. Subsequent to the item analysis carried out on the resilience questionnaire, the weak items were omitted from the rest of the statistical analysis. The reliability of the resilience questionnaire was determined using Cronbach's Alpha Reliability Coefficient. The reliability of the resilience questionnaire was calculated as 0.88 which is considered high.

The following conclusions can be drawn after testing the hypotheses:

- Girls tend to exhibit more resilient behaviour compared to boys.
- Learners in a school that offers additional educational support display more resilient behaviour compared to learners in a school that does not offer specific additional support.
- Teacher-learner relationships, parental involvement, cognitive development and study orientation are greater in a school that offers additional educational support, compared to a school that does not offer additional educational support.
- Teacher-learner relationships, parental involvement, cognitive development and study orientation relate positively to a learner's potential to demonstrate resilient behaviour.

- Individuals who display higher resilient behaviour show higher academic achievement in languages, nonverbal numerical ability as well as verbal learning subjects.

- Learners in a school that offers additional educational support are more likely to excel academically than learners in a school that does not offer additional educational support.

- Additional educational support, resilient behaviour and cognitive development collectively explain 33 per cent of the variance in average academic achievement.

In chapter 6, the implications of the investigation as well as the conclusion of the study will be discussed.

CHAPTER 6

CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

In chapter 1 it was specified that the aim of the research was to investigate the influence of additional educational support on the resilient behaviour and subsequent academic performance of adolescents in Grades 9 and 10. The role of variables such as cognitive functioning, parental involvement, teacher-learner relationships and study methods on resilience and academic performance were also taken into account.

The research consisted of two parts, namely a literature study and an empirical investigation. The literature study explored the individual constructs as well as the relationship between two phenomena: resilient behaviour and academic performance. Firstly, resilient behaviour was analysed by exploring various definitions and theories on the development of resilience. The inherent and contextual variables which either promote or hinder resilient behaviour were also identified. Secondly, the academic achievement of adolescents was explored by identifying the individual and environmental factors which contribute to the phenomenon. Finally, the relationship between resilient behaviour and academic achievement was established, based on the findings in the literature.

The results of the empirical investigation revealed a number of findings around academic performance, resilience and the relationship between the two. In addition to girls displaying more resilient behaviour than boys at an individual level, schools that offer additional educational support also tend to have a higher average of resilient learners compared to schools that do not offer such additional educational support. Furthermore, schools that offer additional educational support also tend, on average, to show a healthier teacher-learner relationship, more parental involvement, superior cognitive development and better study orientation. All these factors were also found to contribute to a learner's potential to demonstrate resilient behaviour. Since there is a significant relationship between resilient behaviour and academic achievement,

learners in a school which offers additional educational support are also more likely to excel academically than learners in a school which does not offer additional educational support.

Consistent with the research results already mentioned, the empirical investigation revealed that the most significant combination of factors associated with academic achievement are the following: additional educational support, resilient behaviour and cognitive development.

The results of the empirical study have certain implications for schools, class teachers, school counsellors and parents and will be discussed in section 6.2.

6.2 Educational Implications

As discussed in chapter 2 (section 2.3), resilient behaviour is a dynamic, context-bound process characterised by constant change, activity and progress (Nguyen, 2012:17). Initiatives aimed at increasing resilient behaviour should thus be dynamic, multifaceted and across school, family and community contexts.

6.2.1 Educational guidance for schools

The most discerning evidence in terms of the empirical investigation is the benefit of additional educational support regarding both resilient behaviour and academic performance. Therefore variables relevant to additional educational support such as quality of instruction, teacher-learner relationships, and parental involvement, are more likely promote resilient behaviour and subsequent academic achievement than variables in schools that do not offer additional educational support.

In line with the findings of the empirical investigation, the theoretical prosocial classroom model as shown in figure 6.1. (Jennings & Greenberg, 2009:494) found the following factors most significant in promoting resilience and academic outcomes:

- teachers' social and emotional competence (SEC)
- quality of instruction (including effective classroom management and instructional skills)

- teacher-learner relationships
- Learners engaging in effective social and emotional learning

Figure 6.1: The prosocial classroom model

Apart from the roles of teacher learner-relationships and parental involvement (which will be discussed in sections 6.2.2. and 6.2.4 respectively) it appears that quality of teaching is significantly related to learner resilience and academic outcomes.   The role of the school in promoting resilient behaviour thus lies with improving the quality of teaching in the classroom through support and development, which will discussed in sections 6.2.1.1 and 6.2.1.2.

6.2.1.1 Teacher support

In order for teachers to create environments that nurture resilience, the school environment should also support teachers' resilience. It is thus imperative that teachers experience support from other teachers as well as school management (e.g. heads of department, principals, school governing body). Since teacher stress and emotional negativity are associated with learner misbehaviour (Yoon, 2002:485–493), ensuring that teachers receive the necessary support will alleviate stress and negativity, thereby enhancing positive classroom outcomes.

6.2.1.2 Staff development

Jennings, Frank, Snowberg, Coccia and Greenberg (2013:376) believe that high rates of teacher burnout coupled with poor instructional skills and classroom management encourage the necessity for specialised professional development to promote social and emotional competency in teachers. Theoretically, reducing the amount of stress experienced by teachers will increase their ability to optimally manage their emotions and their classrooms, thereby improving learners' resilient behaviour and academic outcomes. Jennings, Frank, Snowberg, Coccia and Greenberg (2013:374-390) conducted a study to ascertain whether implementing an intervention named Cultivating Awareness and Resilience in Education (CARE) could improve teacher, classroom and learner outcomes. The results of the CARE intervention programme showed improvements in both teacher wellbeing and efficacy and learner and classroom outcomes (Jennings, Frank, Snowberg, Coccia & Greenberg, 2013:386).

6.2.1.3 School-community collaborations

In addition to supporting and professionally developing teachers, the school is also responsible for collaborating with the community in promoting learner resilience and academic achievement. Partnerships between schools, families and communities (which will also be discussed in section 6.2.3) provide learners with a network of role-players invested in their wellbeing. According to Bryan (2005:219-227) two types of partnerships have proven successful in facilitating educational resilience and academic achievement, namely:

- family-centred partnerships such as family centres, parent education and family outreach, and
- extracurricular enrichment partnership programmes such as tutoring, mentoring and after-school enrichment programs

6.2.2 Educational guidance for class teachers

According to the research results, class teachers are pivotal role players regarding their learners' resilient behaviour and subsequent academic performance. The

findings from the empirical investigation and literature study emphasise not only the class teacher's academic influence in terms of cognitive development and study orientation but also the significance of the relationship between the class teacher and the learners. The way in which class teachers can assist with developing resilient responses in their learners will be discussed below.

6.2.2.1 Relationship building

Downey (2008:58) mentioned several strategies for creating rapport between teachers and learners:

- *Foster good teacher-learner interactions.* Research indicates that individual learners who displayed resilient behaviour in the face of adversity had a minimum of one teacher who believed in them (Borman & Overman, 2004:177-197). Downey (2008:57) believes that learners who feel cared about are less likely to give up. Teacher-learner relationships should thus be characterised by trust, care, respect and cohesion.

- *Set challenging yet attainable goals.* Teachers are responsible for communicating high but realistic expectations for academic performance as well as for providing the support necessary to achieve the goals set out for the learners (Downey, 2008:58).

- *Focus on learner strengths and assets.* Since there is a strong relationship between self-esteem and academic achievement (Masten 2001:22-238), learners must be taught to recognise their individual strengths, abilities and achievements. Downey (2008:58) emphasises the point that self-esteem should be centred on honesty. Teachers must therefore refrain from insincere compliments and provide true, constructive feedback.

6.2.2.2 Teaching environment

Learners are more likely to manifest resilient responses in an academic milieu with the following characteristics (Downey, 2008:59):

- *Focus on developing learners' internal locus of control.* Learners need to be taught a sense of personal responsibility for their work as well as for themselves. Downey (2008:59) suggests making use of short-term and long-term planning coupled with realistic consequences for not meeting deadlines. Consequences should not be punitive and discouraging but should instead allow opportunity for growth.

- *Structured academic and social expectations.* Rules regarding both academic standards and behaviour should be explicit and reliable. In addition, teachers must consistently communicate these expectations to their learners (Brooks, 2006:69-76).

- *Meaningful classroom experiences.* In order to promote resilient behaviour, learners need to feel invested in what occurs both in the classroom and in the school at large. Allowing learner input is thus an integral part of providing opportunities for meaningful participation (Downey, 2008:60).

6.2.2.3 Quality of instruction

One of the most successful instructional strategies in promoting resilience is active, cooperative learning. Learning approaches such as problem-based learning and reciprocal teaching assist in supporting educational resilience (Downey, 2008:60). In addition to using a hands-on, inquiry-based approach to the curriculum (Waxman, Padron & Gray, 2004:37-62), learners must be encouraged to demonstrate their methods of problem solving (Dunn, 2004:348-363). Involving learners in their learning creates a sense of both responsibility and motivation in them.

6.2.2.4 Acquisition of life skills

According to Downey (2008:61) and Brooks (2006:69-76), the following life skills are indispensable to learners:

- social skills
- coping with stress
- managing conflict
- assertiveness skills
- communication skills
- problem solving and decision making
- critical thinking

In addition to facilitating the teaching of these life skills, teachers should also encourage learners to participate in extracurricular activities. Apart from being a positive use of energy, extracurricular activity can also improve learner motivation and academic achievement (Hawkins & Mulkey, 2005:62-88).

6.2.2.5 Attuned responses

Rappaport and Warshof (2013:35) describe attunement as the ability to ascertain a learner's mood and respond in a manner that will allow the learner to feel understood. Attunement also involves the ability to read both verbal and nonverbal cues in individuals such as body language, facial expressions, volume and intensity of speech and so on.   Hughes (2007:62-113) describes the principles of attunement using the acronym PACE (Playfulness, Acceptance, Curiosity and Empathy). Although teachers cannot be attuned to all the needs and feelings of a classroom full of learners, they can adopt an attuned stance and show proactive interest in their learners. By showing interest in their learners, teachers will solidify the relationships with their learners and be able to tolerate difficulty should a complex situation arise (Pianta, 1999:15-112).

6.2.3 Educational guidance for school counsellors

Bryan (2005:220) identifies modern school climates as undergoing drastic reformation. In this era of reform, the function of educators, school counsellors and school stakeholders has become far more holistic and intricate. Taylor and Adelman (2000:298-307) depict school counsellors as those who take on leadership roles aimed at actively reducing barriers to academic achievement and promoting resilient behaviour amongst their learners.

As discussed in section 5.3.4, the potential for resilient behaviour in an educational context exists as a result of the relationships between learners, their teachers and their parents. It is thus the duty of the school counsellor to facilitate these relationships by providing leadership for partnerships between schools and families as well as the greater community at large (Colbert, 1996:100-104). Bryan (2005:226) and Bemak (2000:323-331) suggest that school counsellors should assume three roles, namely: team facilitator, advocate and collaborator. These three roles will be discussed in sections 6.2.3.1 to 6.2.3.3.

6.2.3.1 Team facilitator

Christenson and Sheridan (2001:138-199) describe the necessity behind implementing comprehensive partnership programmes that will both embrace members of the family and community and challenge the traditional partnerships of the past. There should be partnership teams on multiple levels within the school instead of the conventional parent-teacher collaborations. Bryan (2005:226) suggests that partnership teams also be designed, planned as well as evaluated by school stakeholders (e.g. administration, educators, and management), parents and community members.

The role of the school counsellor as a team facilitator entails assisting partnerships to work collaboratively. Aside from their training in group work, school counsellors must facilitate effective communication in resolving conflict and solving problems that will inevitably arise within the partnerships. Furthermore, school counsellors need to ensure that diverse perspectives are appreciated within partnership groups.

6.2.3.2 Advocate

Lee (1998:3-16) defines advocacy as the act of arguing the cause of another. In assuming the role of the advocate, the school counsellor will strive to remove the systemic barriers that prevent learners from achieving success – particularly for learners exposed to poverty and adversity (House & Martin, 1998:284-291). In other words, school counsellors need to convince school stakeholders of the value of school-family-community partnerships to elicit support for building these partnerships. According to Bryan (2005:227) one of the first challenges a school counsellor will face in advocating partnerships, will be addressing stereotypes and misconceptions that may exist about the families and communities that will be involved in the partnerships. School counsellors will also have to reframe the deficit-focused view of learners to an asset-based approach. Facilitating staff development workshops may provide effective platforms for school counsellors to promote the implementation of school-family-community partnerships in addition to creating opportunities for school stakeholders to examine their views on partnerships.

6.2.3.3 Collaborator

Noguera (2001:18-41) defines successful collaboration as occurring when schools, families and communities have shared goals, hold an equal view of one another and contribute to the development and implementation of partnership plans alike. School counsellors facilitate school-family-community collaboration by (Bryan, 2005:228):

- open, respectful dialogue between schools, families and communities
- mapping the assets in the community in order to learn where the resources are located and, finally,
- assembling the resources that have been located in the community.

In assuming the role of the collaborator, school counsellors will need to become familiar with the community as well as scrutinise their own stereotypes and beliefs about the community.

6.2.4 Educational guidance for parents

In terms of the empirical study, parental involvement is paramount in promoting resilient responses in learners. The term "parental involvement'" need not be restricted to biological parents as such, but can be broadened to include caregivers and guardians. This is particularly significant in the South African context where many children are orphaned or separated from their families.

In order to optimally foster resilience in children, parents should follow a proactive approach (Alvord & Grados, 2005:240; Siqueira & Diaz, 2004:152). The following guidelines can assist in enhancing children's resilience and future outcomes:

- *Consider your child's health and development.* Children require consistent health supervision, particularly in the first five years of their life (Siqueira & Diaz, 2004:152). Parents should ensure that children receive the required vaccinations, and take measures to prevent communicable diseases. In addition, parents require an understanding of the physical, social and emotional milestones of childhood. This knowledge is necessary to be able to identify problems and facilitate early intervention for the child.

- *Adopt an authoritative parenting style.* Optimal competence in children has been associated with authoritative parenting (Baumrind, 1989:349-378). Authoritative parents are warm, responsive and supportive but are also firm, consistent and set realistically high standards for their children.

- *Allow children freedom of expression.* Parents are encouraged to let their children express both positive and negative feelings (Alvord & Grados, 2005:241). Children should be afforded the opportunity to discuss their fears and concerns and be taught appropriate outlets and forms of emotional expression.

- *Foster self-esteem.* Parents should provide children with the opportunity to nurture and develop their talents and strengths (Brooks & Goldstein, 2001:42-

88). Children need to achieve a sense of mastery and competence which can be facilitated through meaningful responsibilities.

- *Encourage optimistic thought patterns.* Children tend to be more resilient when they can view negative events as temporary as opposed to permanent (Seligmann, 2002:10-88). Children should be taught how to put things into perspective and to become aware of their thoughts.

- *Nurture connections and attachments.* Positive connections with parents as well as peers are significantly related to children's potential to behave resiliently (Masten & Coatsworth, 1998:205-220). In addition to nurturing their own connections with their children, parents should encourage positive peer relationships.

- *Teach and model self-regulation.* One of the most fundamental protective factors is self-regulation or self-control (Alvord & Grados, 2005:240). Self-regulation refers to the ability to control emotion and subsequent behaviour. Children who can modulate their emotions are more independent and more likely to have positive social relationships.

- *Teach problem-solving skills.* Children should be taught how to differentiate between controllable and uncontrollable situations (Alvord & Grados, 2005:241) and how to generate alternatives when dealing with different problems.

- *Make use of positive discipline.* Parents should guide their children's behaviour by setting limits for undesired behaviour and conversely rewarding desired behaviour (Siqueira & Diaz, 2004:152).

- *Encourage individuality.* Children should be encouraged to embrace their individuality and unique attributes. Children who accept themselves are also more open to accepting others and developing resilient behaviour traits.

6.3 Evaluation of the study

The study offered several contributions to the field of resilience. In what is predominantly an internationally researched topic, the study offered a South African perspective on the concept of resilience through the use of a valid and reliable measuring instrument developed in South Africa. Furthermore, the study investigated the dynamic process of resilient behaviour occurring across educational, interpersonal and intrapersonal contexts as well identifying the role of individuals who contribute to resilience in these contexts.

Although contributions were made during this investigation, there were also a number of limitations. Firstly, the conceptualisation of the phenomenon of resilience poses one of the greatest problems in resilience research. The inconsistencies in both the theoretical base and the models used to measure resilience provide incongruent research results and unstable classification of resilient behaviour (Luthar et al., 2000:543-562). The multidimensional nature of resilient behaviour also proves a limitation for research (Luthar et al., 2000:543-562). Resilience is not an overarching concept since individuals do not demonstrate resilience across all domains: instead they are competent in some aspects but not in others. A resilient adolescent may, for example, demonstrate social resilience but will not necessarily demonstrate academic resilience.

Another shortcoming in the study of resilience lies in the measurement of adversity. Resilient behaviour is described as positive adaptation despite exposure to adversity. However, Hoffman (2010:385-394) warns against the danger behind the amalgamation of stress and trauma into the overriding concept of "adversity". Not only does this affect individuals' qualitative experience of their unique adversity but also poses a quantitative dilemma when measuring varying levels of adversity as one unitary concept.

The measurement of the outcomes of resilient behaviour is another limitation of the study. Varying definitions of "positive outcomes" as a result of resilient behaviour as well as measuring these elusive "positive outcomes" prove problematic. The concept of positive outcomes presents a dilemma due to the subjectivity of the term. To one

person, passing Grade 12 could be viewed as a positive outcome while to another qualifying as a doctor could be regarded as a positive outcome.

Lastly, since resilience is a dynamic, context-based concept, context-specific interventions should be implemented. However, many of the existing interventions were not researched within a South African framework and are therefore not ideal for use in a South African context.

6.4 Recommendations for future research

In general, the overall need for clarification and consistency of terminology in the field of resilience (Luthar et al., 2000:543-562) and the current under-representation of South African studies in resilience research have significant implications.

South Africa requires rigorous, large-scale studies of resilience that utilise both quantitative and qualitative approaches (Theron & Theron, 2010:6). In addition, resilience studies need to adopt a longitudinal approach such as the pioneering study by Werner and Smith (1977) on sustainable resilient behaviour. Both Theron and Theron (2010:6) and Luthar et al., (2000:543-562) emphasise the need for integrative, multidisciplinary research into resilience. Aside from the psychological aspect, resilient behaviour needs to be explored from social, cultural, anthropological and specifically biological frameworks.

In terms of the current study, three recommendations are made for additional research. Firstly, considering the existing sample consists of 117 learners from only two schools, the sample could be expanded across more schools in order to expand the validation of the results obtained. Secondly, additional educational support, resilient behaviour and cognitive development explained 33 per cent of the variance in academic achievement. It is therefore suggested that further research be conducted to ascertain which variables account for the remaining 67 per cent of the variance in academic achievement. Thirdly, a number of recommendations for parents, class teachers, guidance teachers and school were provided to foster resilient behaviour in learners. In future research, selected recommendations could be empirically

investigated in order to determine their efficacy and their value in terms of practical application.

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ADDENDUM A: RESILIENCE CONCEPTS

Attribute of a resilient person	Question measuring the attribute
Internal locus of control	1. I am in control of my learning.
Perseverance	2. I don't give up when I don't understand something in class
Realistic	3. I accept that I cannot change bad marks that I have received in the past
Flexible	4. I don't get upset when things change unexpectedly at school
Optimistic	5. I look forward to going to higher Grades
Responsible	6. I am responsible in my schoolwork
Adaptable	7. I am able to adjust to different academic situations
Sense of Pride	8. I am proud of who I am at school 9. I am proud of my academic achievements
Ability to Multitask	10. I am able to handle more than one school task at a time
Ability to handle pressure	11. I am able to manage pressure at school
Enjoy a challenge	12. I enjoy being challenged academically
Disciplined	13. I am in control of my academic future 14. I am in control of my behaviour in class
Goal-directed	15. I set academic goals for myself 16. I finish work that I start
Sense of Humour	17. I am able to laugh at mistakes that I make at school
Objective	18. If my peers are arguing, I am able to see both sides of a situation
Perspective	19. I do not let bad results get me down 20. I can make it through difficult learning situations
Self-efficacy	21. I am a capable, strong learner
Self-esteem	22. I believe that I am a valuable part of my class

	23. I believe in my academic abilities
	24. My schooling has meaning
Self-concept	25. I know my strengths and weaknesses in my schoolwork
	26. It's okay if not all my peers like me
Self-Awareness	27. I do not pretend to be someone else around my peers
Coping skills	28. I know how to handle various school stressors
Interested	29. Many different subjects interest me
Focused	30. I know what I have to do when I am in class
Enthusiastic	31. I am enthusiastic about my schoolwork
Reliable	32. I am someone that teachers can rely on
Determined	33. I am determined to do well in my schooling
	34. I can make decisions about my future schooling
	35. I have set a purpose for myself at school

ADDENDUM B: RESILIENCE QUESTIONNAIRE

INSTRUCTIONS

Answer the following statements by awarding yourself a number between 1 and 6. Write this number in the block next to the statement.

This is exactly how			**This is not at all how**
I experience it	6 5 4 3 2 1		**I experience it**

Remember it is how you think about yourself and not how others judge you

1. I am in control of my studies at school

K13

2. Teachers make me feel safe and at ease

K14

3. I sometimes laugh at mistakes I make at school

K15

4. I get upset when a teacher unexpectedly changes his/her mind

K16

5. I am proud of who I am at school

K17

6. I find it difficult to keep a study timetable

K18

7. I accept that not everybody in class likes me

K19

8. I hide many things from my teachers

K20

9. Bad results get me down

K21

10. I do not think that my teachers really understand me

K22

11. I am responsible in my schoolwork

K23

12. I try to pay attention in class

K24

13. My teachers are unnecessarily critical of my performance

K25

14. I finish work that I begin with

K26

15. Schoolwork serves no purpose for me

K27

This is exactly how I experience it	6 5 4 3 2 1	This is not at all how I experience it

16.   I am proud of my academic achievements

K28

17.   I accept that I have to work hard at school to be successful

K29

18.   My teachers set requirements which I cannot reach

K30

19.   I can make it through difficult learning situations

K31

20.   I am inclined to postpone school assignments

K32

21.   My schooling has meaning to me

K33

22.   My teachers are often unfair

K34

23.   I am determined to do well at school

K35

24.   My heart skips a beat whenever a teacher asks me a question

K36

25.   I am convinced that school subjects can be interesting

K37

26.   I believe that I am a valuable part of my class

K38

27.   My teachers support me sufficiently

K39

28.   I become nervous when I have to submit work because I do not know how the teacher is going to evaluate it

K40

29.   I am able to make adjustments in my life in order to study more productively

K41

30.   If a teacher criticises my work I try to understand his/her point of view

K42

31.   I believe in my academic ability

K43

32.   My teachers trust me

K44

33.   I am able to handle more than one school task at a time

K45

34.   My teachers accept the way I am

K46

121

35. I do not pretend to be someone else around my peers

K47

36. I do not give up when doing difficult homework

K48

37. My teachers are often dissatisfied without even listening to my explanation

K49

38. I set academic goals for myself

K50

39. My teacher allows me to voice my opinion

K51

40. I am a capable learner

K52

41. I can rely on my teachers when I need help

K53

42. I am enthusiastic about my schoolwork

K54

43. My teachers are familiar with my abilities and limitations

K55

44. I can trust my teachers

K56

45. I know how to handle various school stressors

K57

46. My teachers give me credit whenever I do my work

K58

47. I know my strengths and weaknesses regarding my schoolwork

K59

48. My teacher takes a personal interest in me

K60

49. I am positive about my progress at school

K61

50. I respect my teachers' opinions and rules

K62

51. I find it difficult to make sound decisions regarding my schoolwork

K63

52. My teachers are honest and sincere towards me

K64

This is exactly how I experience it	6	5	4	3	2	1	This is not at all how I experience it

53.   I am able to handle pressure at school

K65

54.   Rules laid down by my teachers are acceptable to me

K66

55.   I try to do exactly what teachers expect of me

K67

56.   I enjoy challenging schoolwork

K68

ADDENDUM C: CONSENT LETTERS FROM SCHOOLS

LYTTELTON MANOR HIGH SCHOOL
Selborne Avenue, Lyttelton Manor, Centurion
Telephones: (012) 664-5698/9 Fax: (012) 664-5039
P O Box 14640, LYTTELTON, 0140
Please address all correspondence to the Principal.

15 November 2012

TO WHOM IT MAY CONCERN

PERMISSION FOR RESEARCH

Should the Department of Education grant permission for this research, we would be more than prepared to assist Ms N Hamilton-Green (Student number: 43942466) to conduct research for her dissertation for the degree MEd (School Guidance and Counselling) at Lyttelton Manor High School. Her dissertation is titled: The influence of resilient behaviour on the academic performance of poverty stricken adolescents in Gauteng schools. She will conduct her research through a questionnaire which will be administered to 25 Grade 9 learners and 25 Grade 10 learners at our institution.

Please do not hesitate to contact me should you require additional information.

P B MALHERBE
PRINCIPAL

LetterPermissionResearchMsNHamiltonGreen15Nov2012

LEAP
SCIENCE
& MATHS
SCHOOLS

23 October 2012

The College of Education
UNISA
Pretoria

Sir/Madam

PERMISSION FOR RESEARCH

We hereby give permission for N. Hamilton-Green (student number: 43942466) to conduct research for her dissertation for the degree MEd (School Guidance and Counselling) at Leap Science and Maths School (Diepsloot). Her dissertation is titled: The influence of resilient behaviour on the academic performance of poverty stricken adolescents in Gauteng schools. She will conduct her research through a questionnaire which will be administered to 25 Grade 9 learners and 25 Grade 10 Learners at our institution.

If there are any queries, please don't hesitate to contact me at 087 700 8082.

Sincerely yours

Mr Ross Hill
Principal

ADDENDUM D: GDE PERMISSION LETTER

GAUTENG PROVINCE
Department: Education
REPUBLIC OF SOUTH AFRICA

GDE RESEARCH APPROVAL LETTER

Date:	6 December 2012
Validity of Research Approval:	4 February 2013 to 27 September 2013
Name of Researcher:	Hamilton-Green N.
Address of Researcher:	107 Dahlia Avenue
	Doringkloof
	Centurion
	0157
Telephone Number:	012 667 3397 / 083 505 3366
Email address:	nadinehgreen@gmail.com
Research Topic:	The effect of resilient behaviour on the academic performance of poverty stricken adolescents in Gauteng Schools
Number and type of schools:	ONE Secondary School
District/s/HO	Gauteng North

Re: Approval in Respect of Request to Conduct Research

This letter serves to indicate that approval is hereby granted to the above-mentioned researcher to proceed with research in respect of the study indicated above. The onus rests with the researcher to negotiate appropriate and relevant time schedules with the school/s and/or offices involved to conduct the research. A separate copy of this letter must be presented to both the School (both Principal and SGB) and the District/Head Office Senior Manager confirming that permission has been granted for the research to be conducted.

The following conditions apply to GDE research. The researcher may proceed with the above study subject to the conditions listed below being met. Approval may be withdrawn should any of the conditions listed below be flouted:

Making education a societal priority

Office of the Director: Knowledge Management and Research

ADDENDUM E: ETHICAL CLEARANCE FROM UNISA

UNISA | college of education

Research Ethics Clearance Certificate

This is to certify that the application for ethical clearance submitted by

N Hamilton-Green [43942466]

for a M Ed study entitled

The influence of resilient behaviour on the academic performance of poverty-stricken adolescents in Gauteng schools

has met the ethical requirements as specified by the University of South Africa College of Education Research Ethics Committee. This certificate is valid for two years from the date of issue.

Prof CS le Roux   20 March 2013
CEDU REC (Chairperson)
lrouxcs@unisa.ac.za
Reference number: 2013 MAR/ 43942466/CSLR

ADDENDUM F: PARENTAL CONSENT LETTER

<u>Parental or Guardian Consent Form for Research Involving a Minor</u>

Title of Study: The influence of resilient behaviour on the academic performance of poverty-stricken adolescents in Gauteng schools

Researcher: MEd Student, Nadine Hamilton-Green

Supervisor: Professor G. Bester

Guiding Institution: The University of South Africa (UNISA)

Description of the research and your child's participation: Your permission is being sought to have your child participate in this research study. The purpose of this research is to ascertain the relationship between resilient behaviour and academic performance.

Your child's participation will involve them filling out a questionnaire. The amount of time required for your child's participation will be approximately 2 hours during afternoon class time.

Please read the following information carefully before you decide whether or not to give your permission.

Discomforts/risks: There are no foreseeable discomforts or dangers to either you or your child in this study.

Incentives/benefits for participation: There are no direct benefits to your child, but your child will receive a small gift for participating. The results of this study, however, will increase our knowledge of the impact of resilience on an adolescent's academic performance.

Statement of confidentiality: All records are kept confidential and will be available only to professional researchers and staff. If the results of this study are published, the data will be presented in group form and individual children will not be identified.

Voluntary participation: Your child's participation is voluntary. We also ask that you read this letter to your child (if age-appropriate) and inform your child that participation is voluntary. At the time of the study, your child will once again be reminded of this by the researcher.

Participants: A sample of 25 Grade 9 pupils and 25 Grade 10 pupils have been selected for the study to complete the questionnaire for the study.

Termination of participation: If at any point during the study you or your child wishes to terminate the session, we will do so.

Summary of findings/debriefing: A short feedback session illustrating the findings of the study will be conducted on completion of the study for those who are interested.

Contact information: If you have any questions or concerns about this study or if any problems arise, please contact Nadine Hamilton-Green at 087 700 8081 or nadinehgreen@gmail.com.

Consent

I have read this parental permission form and have been given the opportunity to ask questions. I give my permission for my child to participate in this study.

Parent/Guardian's signature_____ Date:_____

Child's Name:_____

ADDENDUM G: LEARNER ASSENT LETTER

Child Assent Form for Research

Title of Study: The influence of resilient behaviour on the academic performance of poverty-stricken adolescents in Gauteng schools

 Researcher: MEd Student, Nadine Hamilton-Green

Supervisor: Professor G. Bester

Guiding Institution: The University of South Africa (UNISA)

Description of the research and your participation: Your permission is being sought to participate in this research study. The purpose of this research is to determine the relationship between resilient behaviour and academic performance.

Your participation will involve filling out a questionnaire. The amount of time required for your participation will be approximately 2 hours during afternoon class time.

 Please read the following information carefully before you decide whether or not to give your permission.

Discomforts/risks: There are no expected discomforts or dangers to you in this study.

Incentives/benefits for participation: There are no direct benefits to you, but you will receive a small gift for participating. The results of this study, however, will increase our knowledge of the impact of resilience on an adolescent's academic performance.

Statement of confidentiality: All records are kept confidential and will be available only to professional researchers and staff. If the results of this study are published, the data will be presented in group form and individuals will not be identified. Your individual identity is completely confidential.

Voluntary participation: Your participation is voluntary. You are under no obligation to take part in this study.

Termination of participation: If at any point during the study you wish to withdraw from the study, you are allowed to do so.

Parental Consent: Your parent/guardian will be asked to give their permission for you to take part in the study. Please discuss your participation with them before signing your assent form. Your parents/guardians will receive a copy of your signed assent form.

Contact information: If you have any questions or concerns about this study or if any problems arise, please contact Nadine Hamilton-Green at 087 700 8081 or nadinehgreen@gmail.com. You are also free to ask the researcher questions during, before or after the study.

Consent

I have read this assent form and have been given the opportunity to ask questions. I give my assent to participate in the study.

Child's signature_____ Date:_____

Child's Name:_____

Researcher's signature_____ Date:_____

Researcher's Name: Nadine Hamilton-Green