CHAPTER 3
Phase 1: The quantitative research, the resilience survey

3.1 INTRODUCTION

Chapter One outlined the two-phased research design adopted for the study. This chapter will detail the quantitative phase process of the study and serves as the basis for Phase 2 of the research. The main research question, *'How does the school influence the resilience of middle-adolescent learners in a black-only township school',* required first the reliable identification of resilient and less-resilient middle-adolescent learners in township schools. This chapter reports the effort to construct a reliable and valid instrument to help identify resilient and less-resilient middle-adolescent learners who would then participate to answer the main research question in Phase 2 of the study, to be reported in Chapter 4.

The underlying principle of this chapter is to ground the construct resilience as manifested by middle-adolescents in a township school through the construction of a questionnaire, developing and validating the questionnaire to ensure it can be used for future research. I will firstly recapture the research paradigms and the research designs which were outlined in Chapter One followed by the explanation of the process followed in the construction of the R-MATS questionnaire. Finally, the statistical analysis and the results of the R-MATS will be discussed.

3.2 RESEARCH PARADIGMS

The research followed a mixed method design using two phases sequentially, with each adhering to its own paradigm, to better understand and explore the concept resilience within the particular context of a township school (Creswell 1994:177; 2003:17). The initial phase, a questionnaire development and a small-scale survey, was quantitative in nature and aimed to identify resilient and less resilient participants and contribute towards developing a South African measure of resilience. The second phase of the research was qualitative in nature, using the IQA method and aimed to investigate the relationship between the resilience of middle-adolescent resilient and less-resilient learners, and the school environment.

In this study, the concept paradigm will refer to theory and method, referring to quantitative, qualitative and IQA (Creswell 1994:1). A quantitative study encompasses a quantitative paradigm and assumptions and a qualitative study encompasses and relies on the assumptions of a qualitative paradigm (Creswell 1994:1-2). Sale, Lohfeld and Brazil

(2002:48) indicate that one of the differences between quantitative and qualitative research methods refers to objectivity (existence of the external referent to gauge the truth) and subjectivity (personal interpretations and meanings attached to the phenomenon under study, which indicate the 'truth', the reality as constructed and interpreted by participants) of the study.

The combination of methods in this research was used to neutralize biases and overcome deficiencies inherent in a single research method, to enhance the validity, strength and reliability of the study, and to enhance the interpretative potential of the study. Creswell's (1994:175) conception of combining methods agrees with the assumption of this study in that the triangulation of methods served to converge results. The findings from the survey questionnaire will ultimately be compared with the findings from the focus group discussions and interviews. The survey was essential in identifying the resilient and less-resilient middle-adolescent learners who would participate in the focus groups and interviews. Focus groups and interviews were essential in addressing the research question regarding the relationship between the school and the resilience of middle-adolescent learners participating in the study. The methods complement each other ensuring the emergence of the construct resilience as perceived by middle-adolescent learners in a township school and the role the school plays in their resilience. The triangulation of methods in this research therefore required a sequential application of methods, to ensure a developmental approach where one method informed the other (Creswell 1994:175), which leaves room for expansion of the study in the future and the creation of the scope for the study to develop further, and to encourage new perspectives.

Creswell (1994:175) questions the mixed method approach regarding what should be mixed paradigm and/or method because specific paradigms have specific methods. Sale *et al.* (2002:48-50) disagree with the notion of mixed methods when they indicate that methods cannot be 'mixed' as they study different 'phenomena' even within the same study. They (Sale *et al.* 2002:48) indicate that a successful approach to a 'mixed method paradigm' lies in the distinction of the phenomenon under study by differentiating between the 'measurement of the construct' and 'lived experiences' and reconciling the phenomena to the method used. Their view (Sale *et al.* 2002:48) indicates that the research question is addressed differently or the phenomenon is looked at differently when using a mixed method approach, which is true because the research question and the sub-questions inform the type of method the researcher applies. The approach this study applied to justify the use of mixed methods, was to identify the constructs under study, to identify resilient and less-resilient middle-adolescent learners developing a survey questionnaire, to 'measure' the resilience of possible participants and then to explore the interactions of the selected participants with the school,

the 'lived experiences' as perceived by them, using focus groups and semi-structured interviews. In this regard, the survey questionnaire gave a general view of who the resilient and less-resilient middle-adolescent learners were. The focus groups and semi-structured interviews gave insight into what and how resilience was constructed and interpreted in a school context by more and less resilient middle-adolescent learners, what Reichardt and Cook (in Foss & Ellefsen 2002:245) term 'the dimensions of discovery vs. verification'.

Furthermore, the study assumed the mixed method approach to better understand the construct resilience using a two-phase design in which the phases were conducted separately (Creswell 1994:177). The disadvantage of the adopted two-phase approach, indicated by Creswell (1994:177), includes the difficulty the researcher and reader may experience in discerning the connection between the two methods used. To avoid confusing the reader in this study, the methods and results of each phase of the study will be reported separately and the findings of the study will in a final exercise be converged or triangulated in accordance with the design of the study.

Regarding the strength of selecting a mixed-method approach, Johnson and Onwuegbuzie (2004:15-16) assume a move from paradigm contradictions and war normally encountered in most methodological literature between quantitative and qualitative paradigms, as they relate the similarities and agreements between the two traditions. Their (Johnson & Onwuegbuzie 2004:15-16) approach supports the combination or triangulation of methods in research and highlights the often-ignored similarities of the two paradigms. The similarities encompass the common approach to research, which includes the use of empirical observations to address the research question (describe data, construct explanatory arguments from data, speculate about outcomes), safeguarding the inquiry to minimize confirmation biases and the 'attempt to provide warranted assertions' about subjects of study (people, environment).

The mixed method approach served to further inform the researcher by providing new insight into the complex phenomenon of the study, resilience, and gave rigor to the research. The two methods when mixed tend to complement each other. The quantitative method allowed the researcher to infer about what was examined, 'you see only what you are looking at', while the qualitative methods helped to 'expand the gaze to elements that were never examined or fully elucidated' (Borkan 2004:4). The IQA method embraces both constructivist and interpretivist approaches to research. IQA assumes that the researcher and the participants are interdependent implying limited separation between the researcher and the subject of the research (participants) to avert the positivistic approach of leaving the interpretation of data solely to the researcher (Northcutt & McCoy 2004:16).

Constructivism indicates that participants are actively participating in constructing new knowledge as they interact with each other and leave the process with new information added to their pre-existing knowledge (Strommen & Lincoln 1992:468). This certainly happens in the IQA method. The constructivist approach to research includes acknowledging the knowledge of the participants in the research process and not viewing them as helpless subjects influenced by their context and circumstances. Strong (2005:90-93) indicates that constructivists' view of experiences is not objective as people use language and culture to translate their experiences and to subjectively interpret them, thus the experiences are subjectively constructed and interpreted and not objectively discovered. This view sets limits to people's knowledge because Confrey (1990:108) indicates that knowledge is a cognitive act and understanding of knowledge is constructed through experiences, while the character of experience is influenced by the cognitive lenses a person uses to access knowledge, thus constructivists' views relate to people's construction of experiences with each other (Strong 2005:90).

Babbie and Mouton (2002:30) refer to Garfinkel's (1960's) interpretation of human behaviour as a depiction of certain expressions of underlying common sense behaviours that help to bring order and smoothness to their everyday lives. As the participants continually interpret and present their knowledge, understanding and meaning of their interactions in their social worlds, they construct new experiences with each other, thus alluding to the constructivist nature of research.

The research techniques used for Phase Two of the research, which allowed participants to reflect, and construct new knowledge, included focus group discussions (using the IQA method) and interviews. The constructivist approach was adopted as a method aligned to both the qualitative paradigm and IQA paradigm with the assumption that through the research techniques employed, participants construct new knowledge as they interact with each other or as they interrogate the phenomenon of the research. In this study, the participants (middle-adolescent learners), through the process of IQA method generated and interpreted data on resilience and the school context and constructed meanings of the phenomenon resilience in relation to the school context and how it influences their ability to rebound from adversities.

The qualitative paradigm is also aligned to the interpretivist approach, which enabled the middle-adolescent learners in the interviews to interpret their own lived experiences as they perceived them, giving a subjective interpretation of the phenomenon as they experienced it. Through Interpretivism, a study intends to understand the lived experiences of participants in their deliberations, descriptions and interpretations of interactions in their social context

(Henning *et al.* 2004:19-20; Ritchie & Lewis 2004:7). The interpretive approach represents the argument that human beings are in the process of constantly 'making sense of their world' as they 'continuously interpret, create and give meaning to define, justify and rationalize actions, people also are in the habit of continually constructing, changing and developing their interpretations of their world (Babbie & Mouton 2002:28-29).

The interpretative nature of a study alludes to research participants as 'investigators and interpreters of their actions' when they interpret their behaviours within the social contexts as stated by Ritchie and Lewis (2004:6), that 'perception relates not only to the senses but to human interpretations of what our senses tell us'. Ritchie and Lewis (2004:7) further state that 'qualitative research places much emphasis and value on human interpretative aspects of knowing about the social world and the significance of the investigator's own interpretations and understanding of the phenomenon studied'. The interpretivist approach includes the notion that people generate and give their own descriptions and meanings to their interactions in their social worlds. The researcher also assumes the position of an interpretivist to interpret data (interpretations of participants) collected from the participants. However, the researcher's interpretations are not permitted to contradict or disregard the participants' meanings, which could lead to data misinterpretation, but he/she is required to give objective and clear descriptions and understandings of the participants' interpretations of their interactions in their social world. In this process, literature knowledge and research of the phenomenon under study is also used.

In the focus group discussions and interviews, I used the interpretive framework to infer the participants' (middle-adolescents') perceptions of their experiences of resilience and how the school context influences their ability to rebound from adversities.

3.3 RESEARCH DESIGN

The research followed a mixed method design or triangulation of methods with the purpose to increase the validity, reliability, strength and interpretation of data, to decrease researcher biases, and to provide multiple perspectives on the research. It was also essential to highlight the issues that required exploration during data collection (Thurmond 2001:253; Frechtling & Sharp 1997:1-8). The initial phase of the research, Phase One, included working on the questionnaire through the process of questionnaire development, piloting, administration and statistical analysis of the main study data (see Figure 3.1 for questionnaire development). After statistical analysis and validation of the final questionnaire items, the selection of the research participants for Phase Two was made.

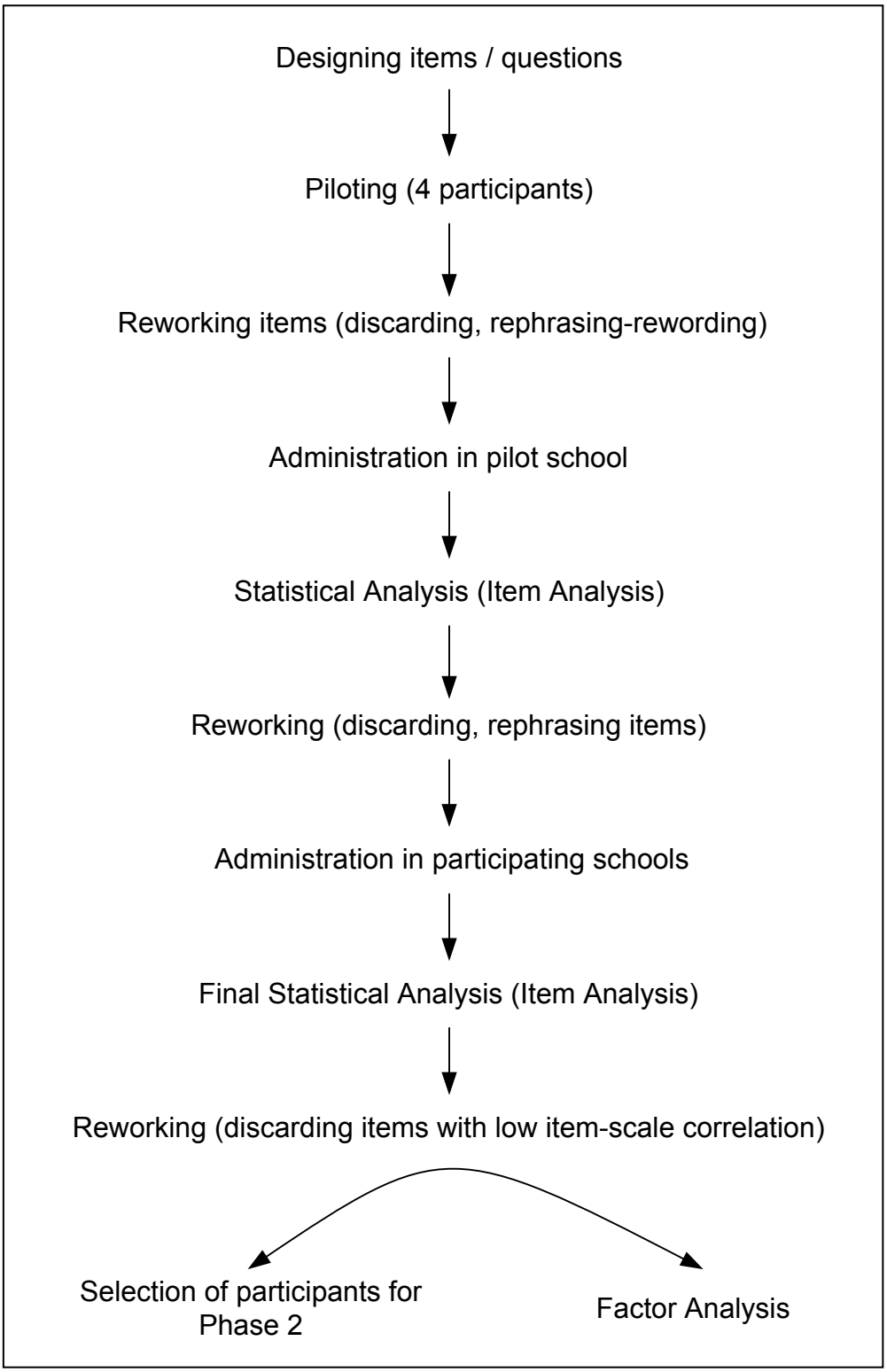

Figure 3.1: Resilience Questionnaire for Middle-adolescent Learners: Development process

Phase One was essential for developing the research instrument, to identify resilient and less-resilient learners as the participants of the research as well as hopefully to gain understanding of the construct resilience for learners from township schools. Phase Two followed the IQA method and aimed to answer the research question and understand the

perceived relationships that exist between the resilient and less-resilient learners and their school environment. Figure 3.2 gives a graphic representation of the research design, incorporating the two phases.

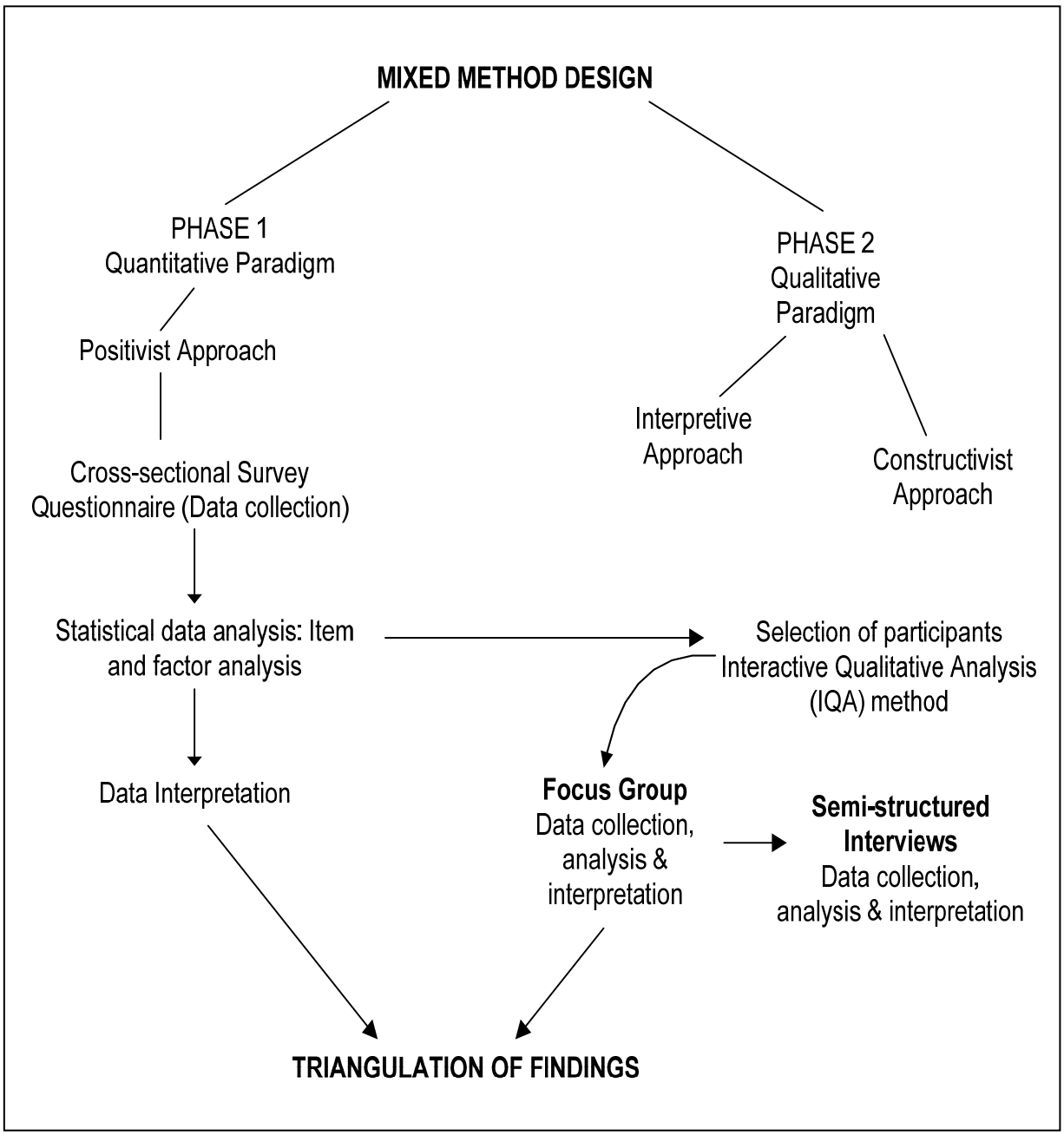

Figure 3.2: Research design

Figure 3.3 elucidates how each phase of the research was conducted by giving a synoptic overview.

PHASE 1 QUANTITATIVE (Survey Questionnaire) **Participants: Grade 8 & 9 middle-adolescent learners from a pilot school and Grade 9 learners from two research schools**					
Questionnaire development Literature review Definition of the construct resilience. Resilience characteristics. Developmental middle-adolescent factors	**Operationalisation of the construct resilience** Behavioural descriptions in terms of which to measure the construct	**Questionnaire** Formulation of questions or statements to represent the behavioural characteristics used to define resilience	**Questionnaire Piloting** Reworking the questionnaire after item analysis and feedback from participants, including item selection and redesigning some items for easy understanding	**Questionnaire administration** Administering questionnaire to Grade 9 middle-adolescent learners in the two research schools	**Questionnaire analysis (Statistical)** Item and factor analysis to determine and enhance the validity of the questionnaire

PHASE 2 QUALITATIVE (IQA focus groups & semi-structured interviews) **Participants: Grade 9 middle-adolescent learners in 2 Schools, the selection based on their resilience scores**			
School 1: Resilient	**School 1: Less- resilient**	**School 2: Resilient**	**School 2: Less-resilient**
Focus group Participants: 4 learners (2 Boys & 2 Girls)	**Focus group** Participants: 4 learners (2 Boys & 2 Girls)	**Focus group** Participants: 4 learners (2 Boys & 2 Girls)	**Focus group** Participants: 4 learners (2 Boys & 2 Girls)
Semi-structured interviews Participants: 2 learners selected from the 4 above (1 Boy & 1 Girl)	**Semi-structured interviews** Participants: 2 learners selected from the 4 above (1 Boy & 1 Girl)	**Semi-structured interviews** Participants: 2 learners selected from the 4 above (1 Boy & 1 Girl)	**Semi-structured interviews** Participants: 2 learners selected from the 4 above (1 Boy & 1 Girl)
Data interpretation and analysis by participants and researcher	**Data interpretation and analysis by participants and researcher**	**Data interpretation and analysis by participants and researcher**	**Data interpretation and analysis by participants and researcher**
Data analysis, interpretation and inferences			

Figure 3.3: Research process

3.4 DEVELOPMENT PROCESS OF THE RESILIENCE QUESTIONNAIRE FOR MIDDLE-ADOLESCENTS IN A TOWNSHIP SCHOOL (R-MATS)

3.4.1 PRINCIPLES OF THE QUESTIONNAIRE CONSTRUCTION

The guiding principles as discussed in the paragraphs below were adhered to in constructing the questionnaire, the R-MATS (Ritchie & Lewis 2004; Babbie & Mouton 2002; Cohen, Manion & Morrison 2000; Dawis 1987; Peterson 2000;).

It became important to ensure that statements were clearly designed to avoid ambiguity and remained relevant to the middle-adolescent learners' developmental phase. To promote clarity and prevent confusing participants, great care was taken to avoid double questions in one sentence. Furthermore, by careful piloting the researcher ensured that participants understood clearly all questions asked. The researcher used the process of piloting to

engage the participants actively and to ask them to provide feedback especially on the readability and cultural sensitivity of the instrument by indicating items they did not understand and those they regarded irrelevant to their situation.

Township schools cater chiefly for learners who are not first language English speakers. It was therefore essential for the researcher to ensure that the language used was easily understandable and relevant to the middle-adolescent age cohort in a township school environment. English, which is the medium of instruction at the level of Grade 8 and 9, is the Second Language for participants and the pilot process aimed to ensure sensitivity for their language level and a measure of guarantee to accommodate the language usage specifically of the township learners. The questionnaire aimed to mirror as far as possible the English language used by learners in township schools and to ensure that its readability level conformed to that of the learners.

Minding that middle-adolescent learners are in a transition phase from childhood to adulthood, specific behaviours characteristic of this stage of development needed to be taken into account. Therefore, the questionnaire needed to consider that generalized statements indifferent to the middle-adolescence phase in respect of the construct resilience and its characteristics would result in general responses that would not be specific to the research question. A domain-specific instrument prevents participants from generating judgements based on their hopeful and imagined tasks. Instead, it forces them to generate statements based on exploratory and predictive judgements which are task-specific (Pajares 1996:547). Therefore, great care was taken to ensure that statements of behaviour or task were domain-specific and developmentally specific.

The use of abstract constructs or theorised questions in the items was avoided to prevent multiple-meanings, confusion and ambiguity. Instead, clear statements that defined behaviour directly related to their own views and circumstances were considered. The questionnaire aimed to capture the perceptions of participants and it was important to use statements that allowed learners to relate perceptions of their lived behavioural experiences and the intended or anticipated behaviours in their social interactions, which formed part of their everyday reality. The perceptions of participants were measured by using behavioural statements indicated by descriptive categories or frequency of behaviour categories. In using a Likert-type scale for self-measurement of behaviour, the use of cardinal numbers was avoided to ensure that learners were not confused or misled into assuming that high value numbers ‘always’ represent ‘good or better’ behavioural outcomes. Instead, descriptive categories, e.g. frequency or degree, were preferred (see Appendix A).

3.4.2 UNDERSTANDING THE RESILIENCE PROCESS WITH A VIEW TO CONSTRUCTING THE QUESTIONNAIRE

Definitions of resilience refer to successful or positive adaptation despite risk and adversity (Masten & Powell 2003:4; Luthar, Cicchetti & Becker 2000b:544; Haggerty, Sherrod, Garmezy & Rutter 1996:9; Masten 1994:3;) and the emphasis is on positive outcome. Waxman, Gray and Padròn (2004:39) indicate that the concept recognises the pain, struggle and suffering involved in the process of being resilient. Masten (1994:7) indicates that resilience is a process and that understanding of the resilience process requires a description of interactions of all the components essential to produce good adaptation despite risk and adversity. Our project team in the SANPAD research on Resilience between South Africa and the Netherlands developed the following working definition of resilience which I will use throughout the study:

> *Resilience is having a disposition to identify and utilize personal capacities, competencies (strengths) and assets in a specific context when faced with perceived adverse situations. The interaction between the individual and the context leads to behaviour that elicits sustained constructive outcomes that include continuous learning (growing and renewing) and flexibly negotiating the situation.*

Successful adaptation in this definition, when operationalised for this study, refers to the ability of the individual to successfully accomplish the developmental milestones as a middle-adolescent learner in a township school, and this refers to the individual learner's pattern of development over time including school adaptations. Normal development in adolescence includes adjustments to various developmental tasks including developing and maintaining relationships, dealing with pubertal changes and the development of a consistent identity. Delays or failure in achieving the appropriate or 'age-salient' developmental task over the developmental phase forms the basis for unhealthy development or psychopathology, whereas successful achievement of the developmental task despite risk and adversity forms the basis for healthy development and resilience (Masten *et al.* 2004:1075, 1077; Masten 1994:4).

The developmental pattern of the individual middle-adolescent learner, including the influence of both environmental and genetic conditions is mapped by the individual's consistent behavioural characteristics over the developmental phase. Furthermore, research indicates that studies of at-risk populations, especially of individuals perceived to have beaten the 'odds', help to identify developmental pathways and factors essential for healthy development (Wang *et al*. 1994:47). My study of middle-adolescent learners in a township school aims to identify such factors which aid the learners to beat the odds. The factors to be identified include survival strategies developed in the process of playing an active role

(learned behavioural characteristics and survival skills) by actively engaging or interacting with the environment and emerging healthily from such adverse environmental circumstances. According to Wang *et al.* (1994:48), such activities of resilient individuals serve as 'self-righting mechanisms', which can be used to provide feedback and to identify successful strategies essential for survival in adverse circumstances.

To understand the behavioural characteristics of the individual learner in a township school as a reflection or indication of resilience, a questionnaire focusing on self-reports of the developmental pattern of the learner, including resilience characteristics operationalised from the construct, would be used. The purpose of operationalising the definition of resilience was to understand the processes and strategies resilient individuals in township schools undergo and use to overcome risk and adversity resulting in healthy adaptations and development. The understanding of the resilience process is essential in the development of context-specific intervention strategies and knowledge about fostering resilience in middle-adolescent learners. Such assessment of the individual functioning through self-report perceived the environmental conditions of the adolescent to be challenging due to the developmental phase of adolescence and the challenging township conditions in South Africa.

3.4.3 OPERATIONALISING THE CONSTRUCT

The definition of resilience used in this study states that **'resilience is having a (1) disposition to (2) identify and (3) utilize (4) personal capacities, competencies (strengths) and (5) assets in a specific context when faced with perceived (6) adverse situations. The (7) interaction between the individual and the context leads to (8) behaviour that elicits sustained constructive outcomes that include (9) continuous learning (growing and renewing) and (10) flexibly negotiating the situation'.** The operationalisation of the construct for middle-adolescent learners and their developmental environments including township, home and school environment, focuses on explanation of the terms numbered in the definition.

(1) Disposition

According to the Fowler and Fowler (1991:337), disposition refers to 'a natural tendency' or 'an inclination'. The definition relates to an individual's acknowledgement of intention. Having the disposition to identify and utilize available resources is having the willingness and the inclination to access and use strengths and assets as an act of volition, and in the process use them to effect and facilitate healthy and positive development. For instance, a learner with practical problem-solving skills, when experiencing problems, will have the ability to mobilise his/her strengths to find a solution to the problems. Statements in the questionnaire

that illustrate the disposition of the individual will include affirmation of behaviour, **'I can',** to indicate the motivation, willingness, intention, readiness and eagerness of an individual to commit to an activity or focus energy on positive actions. Since 'disposition' in the definition is attached to identification and utilization of strengths, such an individual will have knowledge or confidence concerning the existence of such resources (available assets) and the motivation to access and utilize them effectively to achieve healthy development. Accessing strengths and assets requires knowledge of processes and procedures on how to go about it. Items on disposition in the questionnaire include the acknowledgement or motivation to make an effort to solve a problem, looking for a solution to promote a healthy behavioural outcome e.g. 'I go to my teacher when I need to talk', 'I try different ways to get something right'.

(2) Identify

To identify means to 'recognise' or 'make out'. It relates to the ability of an individual to introspect, investigate, recognise and be aware of, in this case, internal and external strengths, competencies and assets that can help to manage and deal effectively with challenges in life. The existence of strengths (internal and external) to the individual does not always purposefully relate to individual awareness and acknowledgement of such strengths, nor to knowledge of how to access and use them. There is a possibility that middle-adolescent learners might fail to successfully self-evaluate and to identify internal strengths, which contribute to their resilience. It is very important for an individual to have awareness or motivation to identify such strengths in order to use them effectively. Statements in the questionnaire that address the identification of strengths indicate admission of character strength, availability and accessibility of strengths, e.g. 'People know that I am good at what I do', 'I believe that I have talents'.

(3) Utilize

To utilize means to 'make use of' what is available, with some set purpose'. The term relates to having knowledge of how to access strengths and to employ them effectively, to enhance the effective functioning of the individual. It also relates to the effective use of one's strengths to achieve positive outcomes and to practising good problem-solving skills. Effective application and use of available resources or strengths (internal and external to the individual) is essential and it is important to be aware of personal strengths in order to use them effectively to lead a healthy life. Statements in the questionnaire that relate to the utilization of strengths include commitment to actions taken to effect positive outcomes e.g. **'**I go to my teacher when I need to talk', 'I ask my friends for help when I need it'.

(4) Personal strengths

According to Wolin (2003:19), strengths are internal individual traits or qualities that coexist with weaknesses and vulnerabilities and they can be learned. Some authors refer to character strengths instead and they relate to individual qualities like problem-solving skills, intellectual curiosity, courage, self-efficacy, optimism, interpersonal skills, perseverance, creativity, initiative, humour, morality, relationships, independence and insight (Hippe 2004:240; Park 2004:40; Park, Peterson & Seligman 2004:607; Seligman 1998:2). Seligman (1998:2) further indicates that individual strengths serve to buffer the individual against mental illness. According to Hippe (2004:240), resilient individuals have self-awareness and are conscious of their strengths and weaknesses. Most of the strengths can be learned through life skill programmes offered in schools. Teaching life skills to learners is considered by Thomsen (2002:3) even to mitigate risk in the environment and thus help to enhance resilience. Statements in the questionnaire that address personal strengths include positive statements that admit to the presence of such strengths, e.g. 'I can achieve good things if I try hard', 'I will be successful one day', 'I have good talents'.

(5) Assets in a specific context

Developmental assets (they are developmental in nature and vary according to the developmental stage of a person) or strengths are the positive building blocks that provide the individual with competencies essential for age-appropriate self-regulation (Scales 1999:113). Assets in the context of this study refer to individual (intrinsic) and extrinsic assets within the social context of the middle-adolescent learner. Assets can be defined as resources available within the social context or system for the individual to use with the purpose to support, inform, guide and serve as a source of knowledge to the individual and to fundamentally effect healthy development. Assets include both human and physical resources, e.g. structures within the school like the library, books, teachers, peers, mentorship programmes, parent-body structures and school policies. Middle-adolescents have the responsibility to know or identify the assets within their social system; it is an active process of involving oneself in the structures of the system and an act of volition, a decision to seek knowledge and answers. The onus to identify, utilize, access and mobilize assets lies with the middle-adolescent learner. To facilitate utilization of assets, the middle-adolescent learner needs to have a conceptual map of what is available and how to access the resources or assets, what is called asset mapping. The navigation map of assets can help the middle-adolescent to find the way in the environment with confidence, to access knowledge which can empower them, and to access support to effect healthy development. Most resilience literature equates assets to protective factors, which are 'positive characteristics, predispositions and influences in an adolescent's life that serve to buffer an individual from negative influences' (Evans, Sanderson, Griffin, Reininger, Vincent, Parra-

Medina, Valois & Taylor 2004:424.e23), including family relationships, adult role models and engagement in structured activities. The difference between an asset approach and resilience approach is that the asset approach focuses mainly on resources and protective factors and how to access, utilise and mobilise them. While the resilience approach focuses mainly on developmental outcomes and individual strengths, it is a process of development which manifests in the presence of assets and stressors.

(6) Context

According to Ungar (2006a:3), Tusaie and Dyer (2004:7), Wilkes (2002:229), Smith (1999:156), and Rutter (1993:626), resilience is affected by context and influenced by the environment. Resilience is therefore context-specific and context-dependent. The context within which the child develops (community, family, even schools) determines what is regarded as healthy developmental behaviour over and above universally determined healthy behaviours (Ungar 2006a:4). As such, mainstreaming resilience characteristics can sometimes be a problem if they clash with cultural or group values and knowledge. Ungar (2006a:4) indicates that cultural variations play an important role in influencing the resilience of children. Most literature indicates that resilience becomes evident or is manifested in situations of adversity. The questionnaire aimed to identify the resilient and less-resilient middle-adolescent learners in a township school while focus group discussions aimed to determine the relationship between the school context and the degree of resilience of the selected participating resilient and less-resilient middle-adolescent learners. Statements in the questionnaire that relate to context include behavioural activities manifested in the social context of the participants (the school), e.g., ‘I get into trouble at school’, ‘I feel safe at school’, 'There is violence at school’.

(7) Adverse situation

Research indicates that resilience occurs or is manifested in the face of adversity or adverse environmental conditions (Ungar 2006a:1; Gilligan 2000:37; Robinson 2000:570; Roosa 2000:567; Dyer & McGuinness 1996:277; Rutter 1999:119; Garmezy 1996:11). A township school accommodates learners mostly from the local township area, including the informal residential sector when required. The informal residential settlements are mostly characterised by conditions of squalor, including unemployment, poverty and poor service delivery. The adverse situations characteristic of middle-adolescent learners in a township school can range from poverty within the family including unemployment, and crime in the area that can interfere with the learner’s ability to move freely within the community and attend school effectively. School failure, which is characterised by repeating a grade, is also an adverse, situation. A learner who is bullied by peers also experiences an adverse situation, as do those affected or infected by HIV and AIDS. Furthermore, abuse within the

family, the death of parents or significant others and incidences of stigma and discrimination at home, at school or in the community are conditions of adversity.

Adolescents who do not develop major developmental problems while raised in adverse environmental conditions, demonstrate resilience (Fergusson & Horwood 2003:2). For resilience to be practised, a person has to bounce back from adversity and continue to lead a healthy life. Overcoming adversity testifies to a measure of individual strength and competence, away from the development of psychopathology. Measuring adversity would look at the adolescent's life events and experiences that have been stressful (Masten *et al.* 1999:150). Statements in the questionnaire that address adversity in the environment and life of the individual pertain to current and past hardships and stressors, like experiences of death or sickness in the family, poverty, violence, exposure to drugs, school failure or academic problems, e.g. 'I do not have money to buy a school uniform', 'I have failed a high school grade before', 'My family struggle to pay for my school needs', 'I have lost my parent(s)'.

(8) Behaviour with constructive outcome

The behaviour of middle-adolescent learners when constructive in relation to school policies, rules and expectations supports healthy development within the school context. This outcome of behaviour relates closely to communication structures and interactions within the school system. The middle-adolescent learner needs to have knowledge of expected school behaviour and this puts the onus on school management structures to communicate the information e.g. how is information on rules of conduct and school policies communicated and translated to learners? What structures within the school system support behaviour management? How are procedures and processes interpreted to the learners?

The school as a system has various sub-systems that interact and influence each other and the learner exists within all the sub-systems with each section promoting its behavioural expectations and norms e.g. the classroom, the administration section, the extra-curricular section and the relationships and interactions with peers across all the sections of the school. The behaviour that promotes healthy development and interactions within each sub-system will contribute to positive outcomes (even though not necessarily the expected outcome based on merit and unit of measurement especially, e.g. academic performance scores) and the learner can be pronounced to be functioning effectively and productively to effect acceptable relationships within that context. Constructive behaviour contributes to positive outcomes and indicates that the learner is learning and accessing knowledge and demonstrating growth in their environment. Examples of statements that demonstrate this factor include: 'In class I help other learners who are struggling', 'When my friends do

something wrong I try to correct them', 'It is important for me to obey the school rules', 'I listen to the teacher in class.'

(9) Continuous learning

This characteristic of resilience indicates the process and developmental nature of resilience since the individual is in a process of learning and grows with every experience and problem he/ she overcomes. The resilient middle-adolescent learner learns from previous lessons and hurdles and uses the knowledge in overcoming new challenges, that is he/she becomes 'cleverer or wiser' with every experience. This ensures that when faced with new challenges they can draw from successful strategies employed in the past to successfully overcome their problems in the new situation. They become knowledgeable and experienced in dealing with certain calamities because of multiple exposures to stressors.

Continuous learning indicates that the experience gained from exposure to adversity becomes meaningful and is used again to overcome other stressors. However, the strategies employed should be constructive and meaningful to the individual to ensure maintenance of positive development and productive behaviour. Continuous learning is about not repeating past mistakes but 'learning from one's mistakes', it is about knowing how to deal with similar stressors because one has developed strategies or support networks to help with the stressors. It does not, however, indicate that one will not bend under such stressors, especially multiple stressors, but it means one will enlist support or strategies learned to deal with the problem. Multiple stressors can include one or more deaths in a family, chronic disease and poverty. Examples of behaviour that supports the characteristic of continuous learning include 'I am not afraid to try new things', 'I know I can learn from my mistakes', 'Working hard makes you clever and does not turn you into a teachers' pet'.

(10) Flexibly negotiating the situation

The resilience characteristic of flexibly negotiating the situation refers to the resilient middle-adolescent learner's ability to be flexible in dealing with adversity and not to follow rigid and ineffective strategies that do not help in resolving the problem. The individual learner has to admit and be aware of problem-solving strategies that are effective and to avoid being stuck in unproductive and rigid thoughts when dealing with a problem. To negotiate the situation flexibly requires strength of character and confidence to admit when an employed strategy is not working and a new perspective is required to resolve the situation. The individual has to learn to gauge and decide to change strategies when the adopted approach to a problem is not effective and to negotiate a new approach that seems to have the possibility to resolve the problem. Different strategies or approaches to problem-solving are necessary to be able to successfully manage this resilience attribute. The learner has to use his/ her support

structures to learn of other measures that can be employed to resolve the adverse situation when the known and familiar approaches appear to be ineffective. This attribute ties closely with continuous learning and requires the learner to demonstrate learned skills in problem-solving by using multiple strategies to manage the situation and to learn most effective strategies that can be employed in similar situations in the future. Examples of statements that look at this resilience characteristic include 'I use different ways to work out a difficult problem', 'No problem can be too hard to work out, I just need a way to get it right'.

3.4.4 RESILIENCE CHARACTERISTICS IN RELATION TO THE OPERATIONALISED DEFINITION

The definition of the construct resilience as unpacked above shares a lot of similarities with resilience characteristics identified in most resilience literature. The identified resilience characteristics together with the operationalised definition of resilience were essential in the construction of the questionnaire. Many authors, including Freiberg (1994:155), Krovetz (1999:7), Masten (1994:14), Oswald, Johnson and Howard (2003:52) and Wang *et al.* (1994:48-49), identified the resilience characteristics outlined in Figure 3.4 to be essential for the development of resilience in individuals, which also informed the design of the R-MATS.

Resilience characteristics	Sub-characteristics	Attributes of the characteristic based on reviewed literature
Social support: It is a comprehensive concept ranging from material assistance, cognitive aspects e.g. helping an individual to solve a problem and emotional or affective aspects e.g. showing a liking- relation to an individual (Rigby 2000:58). 'Information leading the individual to perceive that he or she is cared for, esteemed, and valued by members of his or her social network' Dubow, Tisak, Causey, Hryshko and Reid (1991:584)	Connection to other competent adults	This characteristic is concerned with supportive relationships an individual has to find, create and maintain with other people. According to Bandura, Pastorelli, Barbaranelli and Caprara (1999:259), presence of social support in an individual's life reduces vulnerability to stress, depression and physical illness. According to literature, most resilient individuals have at least one strong relationship with an adult and developing resilience requires caring and supportive relationships (Johnson & Wiechelt 2004:661; Masten & Reed 2005:85; Thomsen 2002:17; Tusaie & Dyer 2004:4; Wang *et al.* 1994:56; Werner & Smith 1982:97-98).
	Appeal to other people and the ability to be receptive	According to Aronowitz (2005:202- 203), adolescents with connections to caring, competent and responsive adults 'were able to envision a positive future for themselves' and developed feelings of competence. Connected relationship with a competent adult helps to reduce risk behaviours in adolescents (Aronowitz 2005:206). Benard (1991:4) concurs with Werner and Smith (1982:56) by stating that resilient children are considered more responsive, active, flexible and adaptive and are able to elicit positive responses from others.
	Stable relationships	A stable relationship with someone and / or support from a significant other can lead to better social adjustments and buffer one from major stressful life events (Jackson & Warren 2000:1442). Furthermore, a stable and secure relationship with an adult or significant person helps developing individuals to experience competence, confidence, trust, initiative and autonomy (Werner & Smith 1992:209).

Resilience characteristics	Sub-characteristics	Attributes of the characteristic based on reviewed literature
Self-directedness: supported by belief in the child's sense of control, responsive significant others who are consistent, warm, supportive, encouraging, etc. (Gilligan 2000:41), self-efficacy		This construct is also referred to as a sense of personal control (Ross & Broh 2000:272) and can be defined as a belief in one's competence to tackle difficult tasks and to cope with adversity in specific demanding situations (Luszczynska & Gutiérrez-Doña 2005:81) and believing that outcomes are contingent on one's choices and actions (Ross & Broh 2000:272). The construct relates to choice of activities, individual efforts, persistence, thought processes and emotional reactions when confronted (Maurer & Andrews 2000:965). The best measure of self-efficacy includes both magnitude and confidence (Maurer & Andrews 2000:966). Self-efficacy as such is an important factor of resilience because it has a direct impact on dealing with or responding to adverse situations (influence task performance) and allows an individual to evaluate own competencies in executing and responding to any task. Pajares (1996:545) indicates that self-efficacy beliefs are strong predictor of the level of success an individual achieves. Individual perceptions and judgement of competencies and strengths to execute a task are essential in self-efficacy beliefs and such judgements of self are influenced by self-concept, because judgement of self and individual strengths and competencies will affect the individual's behaviour, performance and perceptions of self. The study will only relate to perceived self-efficacy because a true measure of the participants' self-efficacy will not be conducted and will rely on their own perceptions or judgements of competencies.
Positive self-worth: indicates the degree to which one is self - assured regarding one's individual capacities and believes in one's own moral worth and virtue (Owens 1994:393)		Owens (1994:393) attests that positive self-worth is linked to pro-social attitude and behaviour and psychological well-being. Self-worth relates to perceptions of self and indicates the tendency of an individual to establish and maintain a positive self-image (Eccles & Wigfield 2002:122). For learners to maintain a positive sense of self-worth in a school environment they need to protect their sense of academic competence and to believe in their academic competence. These assumptions imply an inter-dependent relationship between academic competence and positive self-worth (Eccles & Wigfield 2002:122). An individual with a positive sense of self has a positive sense of worth, a clear purpose in life, and a sense of control. They have an understanding of who they are, what they want to achieve in life and the direction they need to take to make their goals real. To have a positive sense of achieving and dealing with tasks effectively includes the confidence of being able to accomplish tasks effectively and successfully (to the best of their ability). This component of positive sense of self relates to the self-esteem of the adolescent and is not about thinking of what the adolescent is capable of achieving. It is more about knowing (the knowledge, confidence and acknowledgement of strengths and talents) about what one is capable of doing and the boundaries of one's strengths (the worth of an individual).
Experiencing success, in one or more areas of their lives		Success attributes positive outcome and a sense of achievement while failure, the opposite of success, signifies undesirable outcomes and has a negative impact on the individual's sense of self-worth and emotional security. Adolescents who experience success in their social and academic life tend to experience more satisfaction and confidence and less stress in their lives (Rew & Horner 2003:382). Rew and Horner (2003:382-383) found that unsuccessful performances of youths in school settings serve as a risk factor for school dropout and delinquency while successful achievements in school foster resilience in learners. The authors also found that lack of school success results in learners disengaging themselves from the school setting (they feel less connected, not belonging to the school) and engaging in antisocial behaviour and incompetence.

Resilience characteristics	Sub-characteristics	Attributes of the characteristic based on reviewed literature
Positive self-concept		Ross and Broh (2000:171) observe that self perceptions influence the self-concept. Self perceptions develop from experiences and interpretations gained from the environment including reinforcements, evaluations or feedback received from significant others and the individual's behavioural attributes (Ross & Broh 2000:271). According to Ross and Broh (2000:271), self-esteem and sense of personal control are the two major components of self-concept. Sense of personal control also refers to self-efficacy, mastery and personal autonomy in some literature (Ross & Broh 2000:272).
Interpersonal skills		Interpersonal skills comprise the ability to interact with others and to access social support using competencies like problem-solving, assertiveness, anger management, communication, conflict resolution and social skills. The lack of interpersonal skills can lead to behavioural problems (Taylor, Eddy & Biglan 1999:170; Somchit & Sriyaporn 2004:295). Interpersonal skills relate to abilities that help the individual to be able to live with others, the competencies that can help the learner to integrate thoughts, feelings and actions and help in the achievement of personal and social goals (Oliver, Collin, Burns & Nicholas 2006:4; Somchit & Sriyaporn 2004:294).
Ability to communicate effectively		MacKay (2003:106) indicates that communication has two functions, content and relationship (information about things that should happen and acknowledgement and correspondence of love and affection). MacKay (2003:106) further refers to Walsh's three components of effective communication, namely: clarity of expression (sending clear and consistent messages and awareness to clarify ambiguous signals), open emotional expression (sharing of feelings and emotions which is characterised by mutual empathy and toleration of differences) and collaborative problem-solving (identifying problems and relevant options to address the problem and work jointly to address them). MacKay (2003:106) declares that effective communication is highly critical in adverse situations because communication is more likely to fail in such situations. With families, resilience mostly occurs in situations where they are able to manage conflict well and is based on good communication and problem-solving skills. According to Jaccard, Dodge and Dittus (2002:12), to achieve meaningful parental communication involves exposing the adolescent to the communication which includes making them attend and comprehend the communication and accept the communicated meaning as valid and being able to store the meaning in memory in order to accurately retrieve it in the future. The process that leads to meaningful communication thus includes exposure to the meaning communicated, attention, comprehension, acceptance, retention and accurate retrieval from memory.
High expectations		Aronowitz (2005:204) points out that coaching (encouragement, support and motivation) by adults manifests in concern for the success of the adolescent, a caring relationship and belief in their positive outcomes, and helps to elevate the expectations of adolescents. High expectations include encouraging learners to do well. Benard (2000:22) indicates that positive and high expectations structure, guide and challenge the learners to go beyond what they believe they can do. Kerka (2003:1) indicates that having high expectations for adolescents, supported by teacher supportiveness, fosters high school achievements. According to Gilligan (1997:15), teachers who have high expectations for their learners' work and behaviour indicate they believe in their innate capacity.

Resilience characteristics	Sub-characteristics	Attributes of the characteristic based on reviewed literature
Belief that life has meaning		Zika and Chamberlain (1992:133) state that a person's sense of meaning is stable, with 'gradual transformations across the life span in conjunction with changing belief and value systems'. The belief that life has meaning relates to positive mental health outcomes, to the notion that personal meaning is mediated by providing interpretations of life experiences to guide behaviour, and to the realization that personal meaning is always accompanied by feelings of satisfaction and fulfilment (Zika & Chamberlain 1992:135).
Problem-solving skill		Dubow *et al.* (1991:585) talk about social problem-solving skills, which they define as 'the ability to generate alternative solutions to social interaction problems, evaluate the possible consequences and choose the most effective solution to the problems'.
Acceptance of responsibility for self and others	Internal locus of control	To accept responsibility for one's own actions and / or transgressions includes acknowledging and accounting for one's actions. It includes taking control of one's actions even in the presence of challenges and contradictions and making decisions and acknowledging doing otherwise (Vanderzee, Buunk, & Sanderman 1997:1842-1844). It includes not blaming others for one's own behaviour or attributing blame to others for one's actions, but taking both blame and tributes for one's own behaviour or choices and owning up to one's actions. Internal locus of control and autonomy involve personal control and thus allow the person the freedom to choose. Internal locus of control is a personality variable that concerns people's expectancies that they can control and direct inner strengths in their lives (Spector & O'Connell 1994:2).
	Autonomy	Autonomy refers to having a sense of identity and the ability to act independently, to exert some control over one's environment, including a sense of task mastery, internal locus of control and self-efficacy (Benard 1995:1). Autonomy refers to the sense of being the cause of one's own behaviour characterised by increased behavioural persistence and performance that reflects more effective and better mental and physical health (Crocker & Park 2004:399). Individuals feel a sense of autonomy when they realise or achieve their personal goals, values and interests (Assor, Kaplan & Roth 2002:262). According to Spear and Kulbok (2004:149), autonomy is an active-process phenomenon which can be viewed as a continuum between dependence and autonomy. The challenge for the middle-adolescent is to understand that the desire to be autonomous does not preclude maintaining connectedness with family and society.
Sense of purpose for the future		People with a sense of purpose or future see themselves as necessary or important to others by the fact of being family members or part of social structures (Thomsen 2002:16). Benard (1991:7) indicates that a sense of purpose and taking responsibility to influence and determine the future is essential for human survival and effective for coping with multiple life stressors.

Resilience characteristics	Sub-characteristics	Attributes of the characteristic based on reviewed literature
Realistic future plans		To have realistic future plans includes the ability of the middle-adolescent to ensure that the plans are practical and within the adolescent's reach. Shanahan and Flaherty (2001:389) infer that future orientations include aspirations for the future and are related to patterns of time use in adolescence (how the adolescent invest and spend their time especially doing constructive work that will benefit future goals), where for a school going adolescent much time is presumed to be allocated to school work and thus preparing for future work and employment. Realistic plans might require hard work, determination and endurance to achieve, but they can be accomplished, and they are within the individual's abilities and strengths. To be able to make realistic plans, middle-adolescents need to have knowledge of their strengths, limitations and abilities. Adolescents are in a process of making plans for their future regarding their independence, educational choices, social relationships and other responsibilities. They need to have awareness of developmental challenges that can interfere with their future plans. Realistic plans include awareness of essential steps to take in achieving the future plans.
High educational aspirations		The aspirations of an individual include one's desires, goals or a 'possible self', an ' imagined self', what one wants to become and does not want to be. To actualize or realise an aspiration requires much effort, energy and resources from the individual and the environment. Educational aspirations include the desire to achieve educationally and the value an individual invests in educational achievement. The relevance of curricular activities helps with educational aspirations (the skills learned need to complement the aspired or required job). According to Kao and Tienda (1998:349-354), educational aspirations influence scholastic outcomes and are influenced directly by significant others who convey their expectations and indirectly by role modelling and economic success. This relates to the possibility that adolescents from low socioeconomic backgrounds might rightfully expect their educational success and perceive successful future careers to result in economic success, and thus position them into a middle-class category.
Social competence		Social competence acknowledges the importance of behaviour in determining social status among peers and other people in the environment, where positively directed actions indicate healthy development and competence.

Figure 3.4: Resilience characteristics

3.4.5 DEVELOPING THE R-MATS

3.4.5.1 Construction of the items

I constructed items based on attributes from the operationalised definition of resilience discussed in 3.4.3 and the resilience characteristics discussed in Figure 3.4, guided by existing questionnaires (Peterson 2000:70; Sax 1997:149, 500; Dawis 1987:481-484) and the findings of my masters' study (Mampane 2004). A pool of between 80-100 items was constructed, containing descriptions of positive and negative behaviours assumed to reflect resilience. Respondents would be required to self-evaluate in terms of the degree of behaviour applicable (True all the time, True most of the time, Half true, A little bit true,

Totally untrue). Numerical values 1-5 represented the degrees of behaviour, but they were used for scoring purposes only and were not visible to the respondents (Sax 1997:149), to discourage the tendency found in an earlier study (Mampane & Bouwer 2006:450), among learners in townships to choose high numbers or scores in self-assessment. Du Plessis (2005:109) also refers to the extremity bias or the tendency to choose extreme values on a scale.

3.4.5.2 Pilot study 1, the items

A small pilot study was conducted with two Grade 8 learners (boy and girl) and two Grade 9 learners (boy and girl) from School 0, using a 40-item set of representative items selected from the pool. The purpose was to obtain feedback on the readability, relevance, comprehensibility, cultural sensitivity, appropriate language usage and the length of the questionnaire. The Life Orientation teacher helped to select four willing, eloquent learners with good academic record to participate in the pilot, using the Life Orientation period (learners were working on worksheets without teacher participation during the period). Time allocated for administration of the questionnaire was 45 minutes, which was the time of a learning period. All learners completed the questionnaire within 30 minutes. I then discussed the questionnaire with the learners to hear their comments. They struggled to understand the degrees of behaviour, (True all the time, True most of the times, Half true or half false, A little bit true, Totally untrue/ False). It became evident that scaling categories of behaviour in terms of choice without using numeric values was difficult for them and this challenge drove me to formulate more comprehensible wording of the categories to ensure clarity. Negative items were challenging for them, they struggled to interpret what the item actually meant. One learner struggled to understand the word 'tough' in the statement '*I am a tough person'.* After this initial piloting, the feedback received assisted in reworking the items and producing two pilot questionnaires which covered similar resilience characteristics but were differently worded, as well as a separate set of items looking at risk factors.

3.4.5.3 Pilot study 2, the questionnaire

The purpose of Pilot 2 was to determine whether the items and instructions were clear, unambiguous and relevant, to determine the time required to complete the questionnaire during group administration, and to select the items for the scale to be used in the main study. Two questionnaires were constructed (see Appendix A). Section A of both versions consisted of 11 identical items addressing environmental risk factors, i.e. family background, relationships within the learner's home environment, socioeconomic factors and other social factors. Items in Section A gave respondents three options to indicate the presence or absence of adversity in their environment with a **Yes, Sometimes or No**. Section B of each

version contained 34 items on resilience characteristics and gave participants five options to indicate how characteristic of themselves the resilient or less-resilient behaviour was: **True all the time, True most of the time, Half true, A little bit true** or **Totally untrue.** The two categories, Half true or half false and Totally untrue/ false were reworded and simplified.

The Head of the Department (HoD) and the Life Orientation teacher of the pilot school assisted with the allocation of classes and identification of periods to use. Life Orientation periods were selected since most of the time learners worked on their own on provided worksheets. Five classes of Grade 8 and 9 learners, totalling 165, participated in the study. The pilot questionnaires were mixed to ensure that every class of participants got both versions. The only difference was Section B, which was on page 2. The front page was similarly designed except for an A and B at the right top corner to indicate Questionnaire 1(A) and Questionnaire 2 (B). The mixing of questionnaires offered the possibility of learners sitting in the same desk to receive different questionnaires, with 86 learners answering Questionnaire 1 and 79 learners answering Questionnaire 2 (see Table 3.1).

Table 3.1: Pilot Questionnaires 1 and 2, Grade 8 and 9 learners

	Questionnaire 1		**Questionnaire 2**	
Grade	**Male**	**Female**	**Male**	**Female**
8	24	33	18	22
9	16	13	12	27
Totals	40	46	30	49
	86		79	

Respondents had 45 minutes for the pilot questionnaire. Most learners completed the questionnaire in 25 minutes about 10 minutes were used for preparation and instructions, and 10 minutes for feedback and comments after the administration of the questionnaire. The learners commented on the clarity of instructions, comprehensibility of the items, language used and ambiguity of items.

Missing data on Questionnaire 1 and 2 included biographic information and some risk factors items in Section A and incomplete questions in Section B on the resilience characteristics. Some learners omitted questions they did not understand and did not ask for clarity. Learners who completed on time appeared to understand the questionnaire and were mostly confident about their contribution and would elaborate on what the questionnaire meant. Learners who took long to answer struggled to give comments, they read slowly, struggled with the categories of choice (they could not make a choice) and some even looked at their neighbours' responses. The overall feedback received from learners who were confident,

mostly in Grade 9, was positive remarks about the wording and their understanding of items. However, they still battled to comprehend the response categories and indicated that the detailed explanation had helped them. The category of '*sometimes*' (Section A) confused them because some undecided learners felt obliged to make a choice in that category e.g. indicating that they sometimes live in a brick house. The lack of question discrimination indicated their inability to self-assess and self-evaluate. In Section A, they struggled with qualifying words like 'at least' and some learners grappled with the explanation of 'abuse', apparently thinking of all forms of abuse.

3.4.5.4 Item Analysis: The Pilot Questionnaires

(1) Section A: The risk factors

A conventional item and test analysis program using ITEMAN (tm) for 32-bit Windows, Version 3.6 was conducted on the two questionnaires to determine item-scale correlations, thus as far as possible to establish the reliability of the scale before administration to the research schools. Item Analysis is a process that compares the participants' responses to the individual items with the total score to enable assessment of the effectiveness of each item (Sax 1997:236, Scorepak® 2005:1). The aim of item analysis is to measure and improve the quality of items in order to eliminate ambiguous and misleading items, rework those that can be improved and to estimate the internal consistency of the questionnaire (Scorepak® 2005:1, Osterlind 1998:257). Items with a positive relationship with the total score in most cases have high internal consistency. A correlation of above 0.30 gives an indication of a good relationship, between 0.10 -0.30 fair and below 0.10 poor (Scorepak® 2005:2, Kline 1994:127). Tables 3.2 and 3.3 show the results of the item analysis for Sections A of Questionnaires 1 and 2.

Even though Section A was similar for both Questionnaire 1 and 2, and the questionnaires were mixed to ensure random distribution among respondents in each class, Table 3.2 and 3.3 show great disparities between the item-scale correlations for Section A of Questionnaire 1 and 2. Also, the Cronbach alpha for Section A Questionnaire 1 was 0.622 and 0.311 for Questionnaire 2.

Table 3.2: Item Analysis, Section A Questionnaire 1*

Item number	Item	Mean	Variance	Item-Scale Correlation	Number per item.	% Endorsing		
						Yes	Sometimes	No
1	At least one member of my family has a job	1.118	0.221	.33	85	94	0	6
2	I live in a brick house	1.116	0.219	**.16**	86	94	0	6
3	My parent / s are still alive	1.235	0.415	.64	85	88	0	12
4	I fight a lot with other children at school	1.417	0.338	.41	84	63	32	5
5	I have enough food to eat at home	1.198	0.275	.63	86	86	8	6
6	I have many problems	1.628	0.513	.52	86	51	35	14
7	There is someone at home who abuses me	1.071	0.089	.35	85	94	5	1
8	I stay with at least one of my parents	1.593	0.799	.52	86	69	3	28
9	I feel I am treated badly at home	1.259	0.239	.63	85	76	21	2
10	My life is very good	1.349	0.274	.49	86	67	30	2
11	I have repeated a grade at high school	1.116	0.219	.35	86	94	0	6

*Item-scale correlation <.30 in bold

Table 3.3: Item Analysis, Section A Questionnaire 2*

Item number	Item	Mean	Variance	Item-Scale Correlation	Number per item.	% Endorsing		
						Yes	Sometimes	No
1	At least one member of my family has a job	1.038	0.062	**.25**	79	97	1	1
2	I live in a brick house	1.190	0.306	.41	79	89	4	8
3	My parent / s are still alive	1.013	0.013	**.21**	78	99	1	0
4	I fight a lot with other children at school	1.253	0.240	.36	79	77	20	3
5	I have enough food to eat at home	1.089	0.106	.39	79	92	6	1
6	I have many problems	1.557	0.373	.55	79	51	43	6
7	There is someone at home who abuses me	1.063	0.110	**.27**	79	96	1	3
8	I stay with at least one of my parents	1.405	0.621	.42	79	78	3	19
9	I feel I am treated badly at home	1.299	0.235	.45	77	71	27	1
10	My life is very good	1.436	0.272	**.28**	78	58	41	1
11	I have repeated a grade at high school	1.177	0.323	.33	79	91	0	9

*Item-scale correlation <.30 in bold

The disparity between the item analysis results of Section A in Questionnaire 1 and 2 is not at all understandable since the questionnaires were mixed per class and the procedure followed when administering the questionnaire was uniform and Section A was the first section to be answered by all respondents. However, all Section A items were revisited based on the feedback received from participants and retained for use with the final questionnaire. The response category of 'Sometimes' was removed because factual questions on risk require a 'Yes' or 'No' to establish the presence or absence of risk factors and to encourage respondents to make a decisive choice.

(2) Section B: The resilience characteristics

Tables 3.4 and 3.5 show the item analysis results of Section B, Questionnaire 1 and 2. The Cronbach alpha was 0.804 for Questionnaire 1 and 0.715 for Questionnaire 2. According to Bland and Altman (1997:572), the higher the alpha the more reliable the questionnaire and a score of 0.7 and above is acceptable. Even though both questionnaires had an acceptable Cronbach Alpha of above 0.7, Questionnaire 1 was decided upon because of the higher alpha.

Table 3.4: Item Analysis, Section B Questionnaire 1*

Number	Selection	Mean	Variance	Item-Scale Correlation	Number per Item	% Endorsing				
						True all the time	True most of the times	Half true	A little bit true	Totally untrue
1	No[1]	1.859	1.039	**.20**	85	45	35	14	1	5
2	Yes[2]	1.729	1.444	.52	85	65	16	6	7	6
3	Yes	1.779	0.730	.42	86	45	35	17	1	1
4	Rew[3]	1.929	0.489	**.26**	85	26	58	14	2	0
5	No	1.721	0.992	**.23**	86	57	22	15	3	2
6	Yes	2.047	1.626	.55	86	49	21	14	9	7
7	Yes	1.812	1.094	.48	85	48	35	8	4	5
8	Yes	1.349	0.809	.37	86	83	8	5	1	3
9	Yes	1.244	0.394	.39	86	83	13	3	0	1
10	Yes	2.788	1.838	**.12**	85	24	20	25	18	14
11	No	2.395	1.844	**.18**	86	38	17	19	17	8
12	Yes	1.663	1.433	.32	86	71	9	8	6	6
13	Yes	1.523	1.180	.38	86	76	10	5	5	5

[1] Items with No were discarded
[2] Items with Yes were retained wholly without any alteration
[3] Item with Rew were reworked and retained

Number	Selection	Mean	Variance	Item-Scale Correlation	Number per Item	% Endorsing				
						True all the time	True most of the times	Half true	A little bit true	Totally untrue
14	Yes	1.465	0.923	.37	86	73	16	6	0	5
15	Yes	1.464	0.749	.49	84	70	19	7	1	2
16	No	3.106	2.330	**.09**	85	22	18	14	19	27
17	Rew	1.271	0.550	.57	85	84	11	4	0	2
18	Yes	1.826	0.679	.41	86	41	40	16	3	0
19	Yes	2.058	1.566	.55	86	45	24	19	2	9
20	Yes	1.965	0.917	.52	86	38	35	20	6	1
21	Yes	2.709	2.439	.38	86	30	24	15	5	26
22	Yes	1.256	0.376	.31	86	81	14	2	2	0
23	Yes	1.682	1.087	.50	85	60	22	12	1	5
24	No	1.256	0.400	.54	86	80	17	0	1	1
25	Yes	1.964	1.630	.44	84	54	18	15	5	8
26	Yes	1.895	1.001	.40	86	41	41	10	5	3
27	Yes	2.012	1.360	.41	86	42	33	16	1	8
28	No	1.302	0.537	.60	86	83	7	9	0	1
29	No	2.388	1.767	**.24**	85	38	16	24	14	8
30	Yes	2.186	1.872	.65	86	43	26	14	5	13
31	Rew	1.624	1.341	**.09**	85	72	11	6	7	5
32	Rew	1.826	1.330	.40	86	56	23	7	10	3
33	Yes	1.259	0.592	.41	85	86	8	2	1	2
34	Yes	1.895	1.210	.34	86	48	30	10	8	3

**Item-scale correlation <.30 in bold

Table 3.5: Item Analysis, Section B Questionnaire 2*

No	Selection	Mean	Var.	Item-Scale Correlation	Number per Item	% Endorsing				
						True all the time	True most of the times	Half true	A little bit true	Totally untrue
1	No[4]	2.759	3.043	**.05**	79	44	5	10	11	29
2	No	2.291	1.624	**.07**	79	37	24	20	11	8
3	Rew[5]	1.244	0.389	**.11**	78	83	12	3	3	0

[4] Items with No were discarded
[5] Items with Rew ere reworked and retained

No	Selection	Mean	Var.	Item-Scale Correlation	Number per Item	% Endorsing				
						True all the time	True most of the times	Half true	A little bit true	Totally untrue
4	No	1.557	0.930	**.25**	79	68	15	11	3	3
5	No	1.203	0.339	**.19**	79	86	10	1	3	0
6	No	1.443	0.956	**.26**	79	80	5	9	4	3
7	No	3.823	1.893	**-.20**	79	14	3	14	27	43
8	No	1.658	1.592	**.17**	79	75	5	8	5	8
9	No	1.582	0.952	**.28**	79	68	13	13	5	1
10	No	1.808	1.284	**.28**	78	55	24	10	5	5
11	No	1.937	1.350	.45	79	46	33	11	3	8
12	No	1.923	1.584	.31	78	55	19	10	9	6
13	No	2.291	2.054	.32	79	44	16	19	6	14
14	No	1.408	0.952	**.24**	76	79	12	4	0	5
15	No	2.114	1.747	.49	79	48	18	18	8	9
16	No	2.013	2.342	.47	79	65	8	4	10	14
17	No	1.570	1.638	**.28**	79	81	4	1	5	9
18	No	2.899	2.926	**.11**	79	34	16	8	9	33
19	No	2.241	2.233	.41	79	52	9	16	9	14
20	No	2.026	2.129	.41	77	58	14	6	8	13
21	No	2.304	1.958	.38	79	43	15	23	6	13
22	No	1.228	0.505	.30	79	87	8	1	3	1
23	No	1.570	1.232	.44	79	72	14	4	5	5
24	No	1.590	1.293	.40	78	72	13	6	3	6
25	No	1.848	2.104	.50	79	71	5	4	9	11
26	No	1.823	1.310	.44	79	56	22	13	5	5
27	No	1.494	1.060	.48	79	75	13	6	1	5
28	No	2.215	2.093	.50	79	49	15	11	13	11
29	No	2.333	1.812	.36	78	40	17	24	9	10
30	No	2.013	2.229	.56	77	62	10	6	5	16
31	No	1.392	1.124	.40	79	86	3	3	4	5
32	No	1.423	1.013	**.26**	78	81	8	4	4	4
33	No	2.519	2.427	.33	79	41	16	13	11	19
34	No	2.405	2.064	.38	79	44	6	25	13	11

*Item-scale correlation <.30 in bold

In addition to the item analysis data, Table 3.4 and 3.5 indicate the decisions concerning item selection for the questionnaire to be used in the main study. The decisions concerning Items 4, 10, 17, 24, 28, 31, and 32 of Questionnaire 1 and Item 3 of Questionnaire 2 require some explanation. The reasons behind my decisions included looking at the response distribution across all the response options and the intention of the item, not only the item-scale correlations. The full questionnaire is included in Appendix A.

Among 85 respondents, only 26% agreed that **Item 4** (*I do my best to find the right answer to a problem, even when it is very hard I do not give up)* was always true to them and none disagreed with the item. It would seem impossible that absolutely none of the 85 respondents ever gave up trying to find the right answer to a problem. The item was reworked and retained because I assumed the 26% respondents gave a true reflection of their positive position, but the 0% was a biased response**.** Also, the item-scale correlation of .26 appeared sufficiently high to merit inclusion of the item once it was reworked.

Item 10 (*Other children make fun of me and hurt my feelings)* had a unique response distribution, with the majority (24% and 20%) admitting to the problem and 25% refusing to commit to a choice either way. Only 14% disagreed with the statement and admitted that other children make fun of them and hurt their feelings. The item was retained despite its exceptionally low item-scale correlation because of its possible contribution to understanding the participants' perceptions of social relationships with peers.

Item 17 (*I believe that I am able to do better and to pass at school)* was reworked in an effort to influence the doubtful distribution of 84% + 11% positive and only 2% + 0% negative responses.

Item 24 (*I know if I work hard I will be able to do better in class)* was deleted in spite of its strong item-scale correlation of .54. As with Item 17, the item had an overly strong positive response of 80% + 17% and only 2% of the participants responded negatively. Since the two items were closely related in terms of content, I opted for the more open wording of Item 17. Item 24 supports a common realistic and factual statement that hard work leads to success and the respondents' positive responses were actually 'right'. The purpose of the item in discriminating between resilient and less-resilient learners could thus be clouded by the shared beliefs, leading to sameness.

Item 28 (*I know if I work hard I would be successful one day*) was deleted in spite of its strong item-scale correlation of .60, for the same reason as Item 24.

Item 31 (*My friends force me to do bad things*) indicates 72% + 11% of respondents agreed with this negative statement and only 12% disagreed. The item was reworked and paired with Item 10, both looking at social relations and peer-pressure.

In **Item 32** *(Teachers explain more in class, they give extra examples)* the word 'more' was replaced with 'a lot' to specify and emphasise teacher support and awareness of the support by the respondents.

From Questionnaire 2, only **Item 3** (*My family want to know if I am OK)* was selected and reworked in spite of its exceedingly low item-scale correlation of .11. Item 3 was paired with Item **8** (*I feel safe and loved at home, they want to know if I am OK'.* See Appendix B for the R-MATS administered in the main study.

The variance which is a measure of variability, gives the average of the squared distance from the mean and is a measure of how far the data are from the mean. Thus, the smaller the variance, the closer the data to the mean and the lower the spread. The variance of most of the items discussed above is low (Items 4, 17, 24, 28 from Questionnaire 1 and Item 3 from Questionnaire 2) indicating little scatter.

The decision not to use the item-scale correlations as the only consideration in selecting items was based on the understanding that an attitude scale runs the risk of subjective biases a finding that middle-adolescents in a township school show an inclination to over-evaluate themselves by choosing high categories as measures of their behaviour (Mampane & Bouwer 2006:450, Du Plessis 2005:109). Unlike a performance scale that gives a true measure of competence and ability and should therefore result in reliable item-scale correlations, an attitude scale gives subjective personal interpretations that represent the 'truth' as respondents choose to show it and this could result in less reliability of the item-scale correlations.

In compiling the questionnaire for the main study, I was furthermore guided by the principle to ensure a fair distribution of similar but differently phrased items addressing specific resilience characteristics and also included a few negatively phrased items to combat acquiescence (Du Plessis 2005:109) and to determine the consistency of answers provided. Finally, the middle response category (*Half-true*) was removed to discourage undecided learners from over-using the middle point and to encourage them to make a choice between the categories of 'truth' provided. The categories of '*A little bit true*' and '*Totally untrue*' were replaced by '*Untrue most of the time*' and '*Untrue all the time*' and their positions were

reversed. This move aimed to combat the inclination to choose extreme categories and to 'force' respondents to choose a 'true' category.

The questionnaire for the main study, now the Resilience Scale for Middle-adolescents in a Township School (R-MATS), ultimately consisted of Section A (11 items on risk factors) and Section B (28 items on resilience characteristics). Negative items (Items **4, 6, 7 9** and **11**) would be reversed through a statistical formula during item analysis.

3.5 THE MAIN STUDY

3.5.1 APPLICATION FOR RESEARCH AND ETHICAL CLEARANCE

Permission to conduct research in public schools was obtained from the Gauteng Department of Education and the Tshwane South District office (see Appendix C). Four schools were identified even though only three schools (one for piloting and two for data collection) were required for research, to avoid disappointment from ill motivated school management and teachers who might delay the research process. Copies of permission letters from the Department of Education and District Office were presented to selected schools. Upon meeting all ethical requirements for the research, ethical clearance was obtained from the Ethics Unit of the University Of Pretoria.

3.5.2 THE RESPONDENTS

3.5.2.1 The schools

The four schools in Mamelodi township that were identified per convenience to participate in the research are within short distance from each other, easily accessible and accommodate learners from Mamelodi formal and informal settlements. School 0 was selected as the pilot school and Schools 1 and 2 as research schools. The Head of Life Orientation Department at School 1 is an Educational Psychologist and agreed to support learners who might require referral for counselling on their adversities after participating in the research. The preferred School 2 was not welcoming and proved unsupportive to the research, so the back-up school became the Research School 2. The Life Orientation teacher at School 2 who serves in the school as a counsellor to support learners and to address problems learners encounter, agreed to counsel learners who might require counselling after the research.

As a pre-requisite to conducting research in public schools, I submitted to the school principal, permission letters obtained from the Department of Education and the district office. I further requested the principal and the Life Orientation teacher to send on my behalf

letters of consent to parents of learners (from identified classes). However, learners failed to submit letters back to Life Orientation teachers and not all identified classes participated due to time-table constraints.

3.5.2.2 Middle-adolescent learners

Initially, the research was intended to target middle-adolescent learners in Grade 8 and 9. After the pilot study, it was evident that many Grade 8 learners were still unsure of their new school environment and were not confident in giving feedback about the questionnaire and the school environment, and that their contribution might be minimal or even confounding in Phase 2 of the study. The middle-adolescent age group (14-16 years) are in Grade 8-10 because of the age norms policy, outlined in Notice 2433 of 1998 of the South African Schools Act (No: 94 of 1996), which states that the age to start school (Grade R) is 6 years. To calculate the appropriate age for a grade, the number 6 is added to the grade number. This indicates that a Grade 8 learner is expected to be 14yrs and a Grade 9 learner 15 years. It was consequently decided to restrict the investigation in both Phase One and Two to learners in Grade 9 meeting the 14-16 years age requirement.

Table 3.6 gives an overview of the 291 Grade 9 learners from School 1 and 2 who completed the R-MATS and their age breakdown. The learners' dates of birth and the date of data collection (School 1: 12th February 2008 and School 2: 5th March 2008), were used to calculate and retain the middle-adolescent age group, with younger and older learners being excluded from the sample. A total of 213 middle-adolescents were included in the study while 78 learners (below 14 years and above 16 years) were excluded from the sample.

Table 3.6: Age-breakdown and selection of respondents*

AGE	FULL SAMPLE	FINAL SAMPLE
13	8	
14	62	213
15	122	
16	29	
17	54	
18	8	
19	1	
20	1	
Age Missing	6	
TOTAL	291	

*Selection shaded

Of the excluded respondents 70 were over age, and the most (54) were 17 years old. With 26,8% of the total number of respondents outside the prescribed age range for Grade 9, it is certainly possible that the age factor played a role in influencing the class dynamics, peer relations and teacher-class relations during curricular activities, even though the teacher's approach to discipline, class management and work expectations should be in line with the school curriculum, policies, norms and values. The perceptions, experiences and expectations of the 17-year-olds about school and learning could possibly differ from those of younger peers in class. Furthermore, it could be expected that age had an influence on the self-esteem of the respondents included in the study. The younger Grade 9 respondents (14-15 years) could be assumed to be on par with Grade and age expectations and thus doing well and being competent. The older Grade 9 respondents (16 years) could be assumed to struggle academically, have a history of grade-failure and thus lag behind with grade-salient tasks.

3.5.3 DATA COLLECTION

The R-MATS was administered during school hours using 10 minutes before the Life Orientation learning period, and the full 45 minutes of the Life Orientation period. In both the participating schools, the Life Orientation teachers were Heads of Department and were given the responsibility by the principal to assist me with the research, and they were able to allocate me the selected classes. Although classes were selected in advance, on a few occasions teachers were not able to locate the learners because they had moved to other classes. The constraint was that I had to adopt the pace of the Life Orientation teacher, because it was difficult to identify classes by myself and to read the school time-table. Because I needed extra time for learners to fill-in consent forms to meet the ethical requirements, they identified classes that could finish earlier allowing me the 10 minutes (See Appendix D for the consent forms). Learners were eager to participate and in no instance did anyone indicate their unwillingness to participate in the study. The procedure required an introduction of the research, where I introduced myself and explained the purpose and the nature of the research and the ethical requirements to be followed. The respondents were informed that some would be identified to participate in focus groups and interviews at a later stage. I read the consent form aloud and allowed them five minutes to reread it on their own and fill their names and sign.

The R-MATS consisted of two sections, A and B. To avoid collecting data with missing information, I structured the administration of the R-MATS in steps, e.g. the whole class started with filling-in the identification information before they could continue with the rest of the questionnaire. I read the instructions to the whole class emphasising the main instruction '*there is no right and wrong answer*', to bring to light the importance of subjective truth and to

sensitise the respondents about their uniqueness and the specific relevance of each question to each individual. To further highlight the instructions, examples were done with the class.

Section B was started only after all the respondents had finished Section A. I read the instructions to them and explained the categories of truth. The main instruction urged them not to allow the response to one question to influence the next question. The aim of the instruction was to appeal to them to think first before they decided on a category and to be aware that each question addressed a different behavioural characteristic. Examples were done to further emphasise the uniqueness and specific relevance of questions and responses to individuals. Only when all the respondents had indicated they understood the instructions, were they allowed to complete Section B. Throughout the administration of the R-MATS the respondents were allowed to ask clarity seeking questions by raising their hands for my attention.

3.5.4 DATA PREPARATION

The completed questionnaires were scored manually before they were captured by the statistician. Items were allocated ordinal numbers for scoring and descriptive purposes during statistical analysis. Each respondent was allocated a learner number represented by V1-V291. Numbers were allocated randomly starting with School 1 followed by School 2. V- was used as a prefix to all ordinal numbers per advice of the statistician. A male respondent was identified in V2 and female V3, Grade V4, School V5. The question items of Section A started from V6-V16 (11 items) and Section B continued from V17-V44 (28 items).

After administration of the R-MATS, the negative items were highlighted in both Section A and B for the statistical reversal of scores. Initially, I reversed the scores manually, but I was advised by the statistician to, instead, highlight the items so that she could reverse them using statistical commands to eliminate human error. Section A had two values of choice, 1 (*Yes*) and 2 (*No*). Section B had four values of choice 1 (*True all the time)*, 2 (*True most of the time),* 4 (*Untrue all the time)* and 3 (*Untrue most of the time)*, in that order. Section B scoring required careful analysis because of the two types of score reversal, the two last columns of *'Untrue'* and the reversal of negative items. The columns of '*Untrue*' were purposefully switched to prevent extreme biases.

To further guard against errors during manual scoring and the capturing of data by the statistician, I received a print out of all data captured for careful analysis and comparison against all the questionnaires. Item analysis followed after checking of all captured data.

3.5.5 ITEM ANALYSIS, SECTION A

Section A of the R-MATS served to provide background information of the participants essential for understanding the environmental stressors each participant was exposed to. Resilience research indicates that resilience is interactive with adversity, so it might thus be relevant to background Section B, on the resilience characteristics, with Section A, the adverse conditions, to understand which adversities would require mitigation when working with a middle-adolescent from a township school.

Table 3.7 shows the results of the item analysis on Section A. The Cronbach alpha for Section A was 0.566, which is less than the acceptable 0.7. Since five items (Items 1,2,3,8 and 11) are factual and the remaining six are open to the respondents' perceptions, this might account for the low alpha and it could be argued it is not a relevant statistic for Section A.

Table 3.7: Item Analysis, the R-MATS Section A*

Item number	Item	Mean	Variance	Item-Scale Correlation	Number per item.	% Endorsing	
						Yes	No
1	One or more members of my family have a job	1.238	0.181	.49	210	76	24
2	I live in a brick house	1.490	0.250	.29	208	51	49
3	One or both my parents are still alive	1.143	0.122	.48	210	86	14
4	*I fight a lot with other children at school*	1.061	0.058	.40	212	94	6
5	I have enough food to eat at home	1.226	0.175	.56	212	77	23
6	*I have many problems*	1.157	0.132	.59	210	84	16
7	*There is someone at home who abuses me*	1.081	0.074	.47	211	92	8
8	I stay with one or both my parents	1.223	0.173	.45	211	78	22
9	*I feel I am treated badly at home*	1.148	0.126	.45	210	85	15
10	My life is very good	1.104	0.093	.41	211	90	10
11	*I have repeated a grade at high school*	1.226	0.175	.29	212	77	23

*Negative items and item-scale correlation <.30 in bold

Table 3.7 indicates the results of a reworked Section A which was slightly different from the original one used in the pilot study (Table 3.2 and 3.3), in having revised some items and deleted the middle response category of '*Sometimes*'. In the pilot study, the category of

'*Sometimes'* had been chosen in all items obviously, except **Item 11. Items 4, 6, 9** and **10** had considerable numbers of respondents who were indecisive (who chose '*Sometimes*'). Section A as used in the main study required respondents to make a decisive choice between a '*Yes*' and a '*No*', resulting overall in an increase of '*No'*-responses, notably also in Items 4, 6, 9 and 10.

The item-scale correlation gives an indication of the relationship between an item and the risk factors overall. Items 2 and 11 indicate a slightly weak item-scale correlation of <.30. Both Item 2 and 11 address factual distinctions, those of settlement and academic performance, and not factors that may be influenced by perceptions, which might explain the weaker item-scale correlation.

Table 3.8 gives a deduction of risk and protective factors the respondents experienced in their environment as concluded from Table 3.7. In addition, Table 3.8 serves as a sample description, encapsulating some aspects of their living circumstances.

Table 3.8: Risk and Protective factors derived from R-MATS Section A

RISK FACTORS	%	PROTECTIVE FACTORS	%
1. Unemployment	24	Employment	76
2. No formal house structure	49	Formal housing, brick house	51
3. Orphan, parent or parents died	14	Parents alive	86
4. Fights a lot at school, poor problem-solving skills	94	Not involved in fights, good problem-solving skills	6
5. Insufficient food	23	Sufficient food	77
6. Many stressors	84	Few stressors	16
7. Abuse at home	92	Feels protected, no abuse	8
8. Not living with parents	22	Living with parents	78
9. Bad treatment at home	85	Good treatment at home	15
10. Bad life experiences	10	Good life experiences	90
11. Repeated a grade, academic problems	77	Adequate academic progress, passed Grade 8	23

A high percentage (>75%) of respondents confirmed that **Items 4, 6, 7, 9 and 11** contributed to their adversities. Item 4 addresses management of peer and social relationships and 94%, the highest number, affirmed they 'fight a lot' at school with other children, which alludes to exposure to violence and poor problem-solving skills. The theme of exposure to violence and abuse was further confirmed by 92% and 85% of respondents for Items 7 and 9 respectively, where the theme of violence had expanded from the microsystem of school to that of the

home. Exposure and experience of violence appeared to be the major type of stressor in the respondents' lives. Violence and abuse can occur in physical, emotional and sexual ways. However, the questionnaire items did not seek to investigate the form of violence or abuse the respondents were exposed to. The exposure and experiences of violence represent chronic forms of stressors and it becomes worse if it occurs both at home and in school, there appeared to be no let-up for the middle-adolescent respondent. It is not surprising that 84% (Item 6) indicated they had many stressors in their lives. Item 11 indicates that 77% of the respondents had repeated a grade in high school. Since a Grade 9 learner has been in high school for only 2 years, 77% is a huge percentage, indicating pervasive academic problems and unsatisfactory academic performance. The item gives more clarity to Table 3.6, where 64 respondents were excluded from the sample because they were over-aged and above 16years.

The sample shows an almost even distribution of respondents from township (51%) and informal settlements (49%). Unemployment (24%) and lack of food (23%) were not among the most frequent stressors, but the figure is worrying considering some parents or caregivers are unemployed and learners do not have enough food to eat. Some respondents had experienced the loss of a parent (14%) and 22% lived with someone other than their parent. The loss of a parent, the consequence of unemployment, malnourishment and living in an informal settlement contribute to chronic forms of stress and require much more action than the individual alone can achieve to overcome. With the stressors as reported, it is surprising that only 10% of the respondents viewed their lives as stressful and their experiences as bad. The rest (90%) of the respondents demonstrated an optimistic view to life, they seemed to view challenges as opportunities and had a positive outlook on life. This overall positive state of the respondents' perspective is a matter of concern for this study because it portrays a simplistic view which might influence how they portray themselves in Section B.

3.5.6 ITEM ANALYSIS, SECTION B

3.5.6.1 Item Analysis, 28 items

Section B of the R-MATS consisted of 28 items describing resilience characteristics on a four-point Likert-type Scale. Table 3.9 gives a summary of the initial item analysis on the full 28 items

Table 3.9: Item Analysis, the R-MATS Section B (28 items)*

Item	Mean	Variance	Item-scale correlation	% Endorsing			
				True all the time	True most of the time	Untrue all the time	Untrue most of the time
1. I have an adult to talk to at home, who listens to me	1.615	1.007	.48	67	15	8	10
2. I make sure that I do my classwork and homework	1.268	0.318	.38	78	19	2	1
3. I do my best to find the right answer to a problem	1.495	0.580	.37	62	31	2	5
4. My teacher works hard to help me understand my work better	1.360	0.373	.39	70	25	4	1
5. I am in control of what happens to me	1.647	0.847	.31	58	28	6	8
6. I feel safe and loved at home, they want to know if I am OK	1.282	0.465	.40	82	10	5	3
7. Doing well at school is very important to me	1.136	0.155	.47	88	10	2	0
8. Other children make fun of me and hurt my feelings	***2.474***	***1.132***	***.20***	***26***	***19***	***37***	***18***
9. Nobody ever asks me if I am OK	***2.170***	***1.273***	***.11***	***40***	***19***	***24***	***17***
10. I do not listen to any adult person at home, I do my own thing	***1.995***	***1.061***	***.26***	***41***	***32***	***15***	***13***
11. My future and success depend on my hard work	1.352	0.562	.49	77	15	4	4
12. I believe that I have good talents	1.349	0.482	.43	75	18	4	3
13. I do not allow people to stop me from trying to do my best in my work	1.419	0.624	.47	72	18	5	5
14. I believe that I am able to do better	1.311	0.450	.61	77	17	2	3
15. Even when my problems are just too much, I do not give up trying to make it work	1.712	0.875	.43	54	30	8	8
16. I know someone at school who cares about me and I can talk to	1.800	1.170	.40	57	20	9	14
17. I use different ways to work out a difficult problem	1.792	0.881	.40	48	34	9	9
18. There is at least one teacher I can talk to who listens to me and encourages me to do my best	1.820	1.105	.52	54	23	11	12
19. I believe that one day things will be better for me	1.224	0.298	.49	83	13	3	1
20. I do not like to be absent from school, I hate to miss the teaching	1.479	0.790	.40	72	15	6	7
21. I know a good person whose behaviour is an example to me	1.651	0.811	.50	57	27	9	7
22. Even when I do not understand in class I don't give up trying	1.627	0.913	.36	61	25	4	10
23. My teachers made me see that I am good with my work and can do well in class	1.491	0.552	.48	63	29	5	3
24. My teachers support me to aim high and to think of my bright future	1.410	0.566	.43	71	21	3	4
25. When I am with my friends I am more ready to do bad things	***1.929***	***0.981***	***.25***	***43***	***31***	***16***	***10***
26. Teachers explain a lot in class, they give extra examples	1.415	0.516	.30	69	23	5	3

Item	Mean	Variance	Item-scale correlation	% Endorsing			
				True all the time	True most of the time	Untrue all the time	Untrue most of the time
27. My future is in my hands, nobody can take that away from me	1.341	0.670	.41	82	9	2	7
28. I am a tough person	1.624	0.882	.31	61	23	7	9

*Negative items and item-scale correlation <.30 in bold

Table 3.9 indicates that **Items 8, 9, 10 and 25** had an item-scale correlation of <.30 and as a result they were discarded from the final scale. Item 8 and 10 may be taken to contain double statements. Although Item 6 and 9 have a similar reference, namely someone interested in knowing if you are OK, Item 6 focused on the home environment while Item 9 was non-specific and the items performed differently. Item 25 relates to peer-pressure and managing social relationships.

Ultimately, the deletion of the four items was a statistical decision because of their weak item-scale correlations and I cannot at this stage confidently assume that respondents failed to comprehend negative items and double-statements because it was not consistently true. Having discarded the items with weak item-scale correlation, the final Section B of the R-MATS remained with 24 items. All further statistical procedures, including a final item analysis, were conducted on this final version of Section B of the R-MATS.

To further ascertain the validity of the R-MATS in identifying resilient and less-resilient learners in township schools, it is essential at this stage to indicate whether there were any statistical differences between the respondents from the two schools, different gender and age. BMDP Statistical Software was used to perform BMDP3D T-Test on Section A and Section B of the R-MATS.

The purpose of the t-tests is to compare the means of two groups to determine the likelihood of the differences occurring by chance (Del Siegle 2003:3). The program BMDP3D T-test performed two group (paired) t-tests, the POOLED T test for equal variance used when the number of subjects is the same or the variance is similar, and the LEVENE F used to determine the equality of variance and normally used when the number of subjects in the two groups is different (Del Siegle 2003:10). The sample of this study was characterised by being in the same grade, from the same township but of different sample sizes, as indicated on Tables 3.10 and 3.11.

Table 3.10: Comparison between research schools

STATISTICAL TESTS	SCHOOL 1	SCHOOL 2
Mean	1.4722	1.4954
Standard deviation	0.3800	0.3353
Sample size	109	104
LEVENE F	0.2735	
POOLED T	0.6380	

Table 3.11: Comparison between genders

STATISTICAL TESTS	MALE	FEMALE
Mean	1.5038	1.4512
Standard deviation	0.3691	0.3399
Sample size	131	82
LEVENE F	0.6262	
POOLED T	0.2979	

Table 3.10 shows no significant difference between School 1 and 2 and Table 3.11 points out that there is no significant difference between the male and female respondents. All the data could therefore be pooled together for the final item analysis, i.e. 24 items, and the factor analysis.

3.5.6.2 Item Analysis, 24 items

A final item analysis of Section B conducted once the weak items had been discarded, confirmed a strong item-scale correlation of > .30 on all of the remaining 24 items. The Cronbach alpha for this set was 0.818, which suggests finally a good measure of statistical reliability of Section B. In addition to establishing increased reliability of the participant selection for Phase Two of this research, the results suggest that the R-MATS could also be utilised more broadly for future research with middle-adolescents from township schools. Table 3.12 contains the results of the final item analysis on Section B of the R-MATS.

Table 3.12: Item analysis: The R-MATS Section B (24 items)

Item	Mean	Variance.	Item-scale correlation	% Endorsing			
				True all the time	True most of the time	Untrue all the time	Untrue most of the time
1. I have an adult to talk to at home, who listens to me	1.615	1.007	.52	67	15	8	10
2. I make sure that I do my classwork and homework	1.268	0.318	.43	78	19	2	1
3. I do my best to find the right answer to a problem	1.495	0.580	.41	62	31	2	5
4. My teacher works hard to help me understand my work better	1.360	0.373	.40	70	25	4	1
5. I am in control of what happens to me	1.647	0.847	.37	58	28	6	8
6. I feel safe and loved at home, they want to know if I am OK	1.282	0.465	.37	82	10	5	3
7. Doing well at school is very important to me	1.136	0.155	.46	88	10	2	0
8. My future and success depend on my hard work	1.352	0.562	.49	77	15	4	4
9. I believe that I have good talents	1.349	0.482	.46	75	18	4	3
10. I do not allow people to stop me from trying to do my best in my work	1.419	0.624	.47	72	18	5	5
11. I believe that I am able to do better	1.311	0.450	.63	77	17	2	3
12. Even when my problems are just too much, I do not give up trying to make it work	1.712	0.875	.47	54	30	8	8
13. I know someone at school who cares about me and I can talk to	1.800	1.170	.44	57	20	9	14
14. I use different ways to work out a difficult problem	1.792	0.881	.43	48	34	9	9
15. There is at least one teacher I can talk to who listens to me and encourages me to do my best	1.820	1.105	.56	54	23	11	12
16. I believe that one day things will be better for me	1.224	0.298	.51	83	13	3	1
17. I do not like to be absent from school, I hate to miss the teaching	1.479	0.790	.41	72	15	6	7
18. I know a good person whose behaviour is an example to me	1.651	0.811	.51	57	27	9	7
19. Even when I do not understand in class I don't give up trying	1.627	0.913	.40	61	25	4	10
20. My teachers made me see that I am good with my work andcan do well in class	1.491	0.552	.50	63	29	5	3
21. My teachers support me to aim high and to think of my bright future	1.410	0.566	.45	71	21	3	4
22. Teachers explain a lot in class, they give extra examples	1.415	0.516	.34	69	23	5	3
23. My future is in my hands, nobody can take that away from me	1.341	0.670	.41	82	9	2	7
24. I am a tough person	1.624	0.882	.34	61	23	7	9

Despite good item-scale correlations of >0.3, Table 3.12 indicates that respondents continued to over-evaluate themselves. By far the majority of respondents rated themselves positively (the first two columns, '*True all the time*' and '*True most of the time'*) with regard to resilience characteristic items and very few chose categories of '*Untrue all the time*' and '*Untrue most of the time'*. The pattern of over-evaluation (Mampane & Bouwer 2006:450) persists, with the adolescents responding affirmatively to almost every statement.

Item 2 indicates that 97% of the 213 respondents 'make sure that they do their homework and classwork' and only 3% said the opposite. Considering the respondents are Grade 9 middle-adolescents (14-16 year olds) it is highly unlikely that this profile could be true, it would be hard to believe learners in this age group can continuously claim this kind of responsible and exemplary academic behaviour. By comparison, Item 13 could be giving a slightly more accurate reflection of the respondents' school environment, because it is highly likely for learners to struggle in identifying and accessing a teacher or any form of adult support at school. The 23% of respondents who reported they have no one who cares about them and to whom they can talk at school, gives a reasonable assumption of events in a school environment, especially early in the year, even though 23% remains a relatively small percentage. Again 23% of the respondents in Item 15 reported that there isn't a single teacher who listens and encourages them to do their best, a worrying fact that confirms what Item 13 indicated.

Table 3.12 highlights possible problems when working with an attitude scale. The R-MATS as an attitude scale is influenced by the ability of an individual to self-evaluate and the willingness to give honest reports of one's own behaviour. Although self-reports have value because they allow respondents to give their own opinion, they require knowledge of self and the ability and willingness to self-evaluate. Du Plessis (2005:109) mentions response biases that can occur during self-reporting, namely acquiescence, social desirability and extreme bias. Acquiescence is the tendency of the participants to agree with all the items, giving positive responses and being compliant (Du Plessis 2005:109). Table 3.12 shows high endorsement of the first two categories and a low endorsement of the two '*Untrue'*-categories. The inability of the respondents to choose the last two categories alludes to acquiescence bias. Social desirability, the tendency of respondents to answer questions in a way they presume will be favourable to the researcher (Du Plessis 2005:109), is also noticeable with this study. It is my view that the respondents disregarded their own honest view and tended to 'act good' or subscribed to the 'normative' standard when they agreed with what was 'supposed to be good', the 'norm' and disagreed with what was in their opinion 'supposed to be bad'.

The extreme bias, the tendency of respondents to consistently choose extreme categories (Du Plessis 2005:109) is not reflected in this study since the predominance of first-column responses, is not at all balanced by the number of last-column responses.

The second and third columns of Table 3.12 (the mean and the variance) give an indication of the measure of dispersion and variability of items around the mean. The last four columns (*% Endorsing*) further give light into the dispersion of scores around the mean. The variance measures the variability of how individual responses deviate from the mean (Osterlind 1998:266). The larger the variance, the more the scores deviate from the mean and the smaller the variance, the less the items deviate from the mean (Osterlind 1998:266). Items 2, 4, 7 and 16 had a small variance of ≤0.3 and the lowest percentage of respondents who endorsed the item as '*Untrue all the time'* and *'Untrue most of the time',* between 2% and 5%. Items 1, 13 and 15 had a large variance of >1 and accordingly a greater percentage of respondents endorsing the item as '*Untrue all the time'* and *'Untrue most of the time',* between 18% and 23%. However, it cannot be ignored that all items had a slightly low mean of 1+ and none had a mean even of 2, emphasising yet again the vast preponderance of optimal self-evaluation.

The R-MATS provided the respondents with the opportunity to reflect, self-evaluate and decide whether the behavioural statements gave a true reflection of themselves or not and not what or how they desired, aimed or planned to conduct their future lives. However, it is difficult to ascertain what the participants' state of reasoning was during the survey, whether they looked at their real self, imagined self or perceived self.

Table 3.13 gives an account of resilience characteristics (protective factors) and characteristics placing resilience at risk as derived from Table 3.12, as the percentage of respondents endorsing the item as true to them, '*True all the time'* and *'True most of the time'* and untrue to them, '*Untrue all the time'* and *'Untrue most of the time'.*

Table 3.13: Resilience characteristics and characteristics placing resilience at risk derived from Section B (24 items)

Resilience Characteristics (Protective factors)	%True all the time	%True most of the time	Characteristics placing resilience at risk (Risk Factors)	%Untrue all the time	% Untrue most of the time
Has adult who listens and whom to talk to at home	67	15	Lacks adult who listens and whom to talk to at home	8	10
Ensures to do classwork and homework	78	19	Does not ensure to do schoolwork and homework	2	1

Resilience Characteristics (Protective factors)	%True all the time	%True most of the time	Characteristics placing resilience at risk (Risk Factors)	%Untrue all the time	% Untrue most of the time
Does best to find answers to a problem	62	31	Doesn't do best to find answers to problems	2	5
Teacher works hard to help in understanding work	70	25	Teacher is not seen to work hard to help in understanding the work	4	1
Has sense of control	58	28	Lacks sense of control	6	8
Feeling safe and loved at home with family enquiring about wellbeing (OK)	82	10	Feeling unloved, unsafe and family fail to enquire about wellbeing	5	3
Doing well at school is very important	88	10	Doing well at school is not seen as very important	2	0
Future and success depends on hard work	77	15	Future and success is not seen to depend on hard work	4	4
Believes in having talents	75	18	Sceptic about having talents	4	3
Doesn't allow people to stop him/her from doing best work	72	18	Allows people to stop him/her from doing the best work	5	5
Believes in own ability to do better	77	17	Sceptic about own ability to do better	2	3
Never gives up trying to make it work, even with many problems	54	30	Tends to give up trying when problems are many or too much	8	8
Knowledge of someone who cares and whom to talk to at school	57	20	Unaware of someone who cares and whom to talk to at school	9	14
Uses different strategies (ways) to solve a problem	48	34	Does not use different strategies (ways) to solve a problem	9	9
Knowledge of a teacher to talk to, who listens and encourages best performance	54	23	Unaware of a teacher to talk to and who can listen and encourage best performance	11	12
Believes in a better future	83	13	Has no hope in the future	3	1
Loves attending school (no truancy)	72	15	Truancy	6	7
Has good role model	57	27	Has no good role model	9	7
Does not give up trying, even when work is hard to understand	61	25	Gives up trying when work is hard to understand	4	10
Teacher helps with understanding academic ability and strengths	63	29	No teacher helps with understanding own academic ability and strengths	5	3
Teacher support in setting academic goals and plans for the future	71	21	No support from teachers in setting academic goals and planning for the future	3	4
Teachers give more explanations and examples in class	69	23	Teachers do not give more explanations and examples in class.	5	3
Sure of own future, certain nobody can take it away	82	9	Unsure of future, other people might influence one's future	2	7
Resilience, hardiness (tough person)	61	23	Less-resilient, sees self as weak	7	9

The columns of percentages in Table 3.13 endorsing the respondents' 'truths' again highlight their tendency towards high appraisals and portrayal of themselves as resilient, showing their overall representations of their internal and external strengths and assets as contributors to their image of themselves as resilient and less-resilient. As with Table 3.12, Table 3.13 therefore cannot be taken as a fully reliable indicator of the respondents' awareness and ability to access and utilise resources within themselves and in their environment, although the trend it shows is still informative. Phase Two might indeed cast further light on this dilemma of interpretation.

Overall, judged by frequency, achieving academic success and future goals appeared to be very important resilient characteristics or protective factors for the respondents in this study. The two '*True'*- columns indicate the respondents' own initiative in working towards achieving academic success and future goals by 78% + 19% who ensure they do their school work, 88% + 10% who value doing well in school, 77% + 15% who acknowledge that hard work leads to future goals and success, 72% + 18% who show commitment to goals, 83% + 13% and in another item 82% + 9% who have a positive future perspective and 72% + 15% who love attending school.

At a second level of frequency, the respondents acknowledged the support and contribution from teachers towards their better understanding and success in academic work, by accentuating their abilities and strengths and setting goals: 70% + 25% and 69% + 23% (the teacher works hard to ensure they understand the lesson content, gives explanations and examples), 63% + 29% (the teacher helps them to understand their own abilities and strengths) and 71% and 21% (the teacher helped in setting goals).

A third set of protective factors comprised determination and focus towards finding solutions to problems, with 62% + 31% who do their best to find answers, 54% + 30% and 61% + 25 % who show determination and never give up and 48% + 34% who use different strategies to solve a problem.

At the fourth level of frequency, the respondents demonstrated awareness and confidence in their strengths by indicating awareness and conviction of their talents (75% + 18%) and belief in own ability to do better (77% + 17%) and acknowledgement of their resilience, being tough (61% + 23%).

The final level of mixed frequency included resilience characteristics, which reflected feelings of safety and the ability to rely on others for love, accessing social support, having a family

that care about their wellbeing (82% + 10 %), and having someone to talk to who listens (57% + 20% and 54% + 23%) and acknowledgement of having role models (57% + 27%).

The small percentage of respondents who chose '*Untrue'* responses highlighted the characteristics contributing to risk in their environment, providing the beginnings of a framework that can help in structuring the required protection to build the resilience of middle-adolescents in township schools.

The two columns endorsing the respondents' '*Untrue'* can be seen to reflect 'true' perceptions of the respondents who deviated from the majority, by not over evaluating themselves. Therefore, the factors that were endorsed by >10% respondents to place their resilience at risk and of the respondents will be discuss.

The first set of factors that exposed respondents to risk comprised lack of access to adults or someone who listen, care and whom to talk to, at home and school (8% + 10%, 9% + 14%), who encourage best performance (11% + 12%) and who can set exemplary behaviour, a good role model (9% + 7%).

The second set of risk factors comprised lack of determination or perseverance when faced with hard work or problems and poor problem solving strategies, (8% + 8%, 4% + 10%) tend to give up trying when work is hard and/ or problems are many and (9% + 9%) never use different strategies to solve problems.

The final mixed level of risk factors comprised lack of sense of control (6% + 8%), non-attendance of school or truancy (6% + 7%) and sense of weakness, not seeing themselves as tough (7% + 9%).

3.5.7 THE R-MATS INTER-SECTION ANALYSIS

3.5.7.1 Correlation between the total scores of Section A and Section B

Using the BMDP Statistical Software, the Pearson and Spearman Correlation Coefficients between Section A and B statistical variables were calculated. According to Yates, Starnes and Moore (2005:348, 352), correlation (*r*) measures the direction and strength of the relationship between two quantitative variables. The values of *r* fall between -1 and 1. The strength of the relationship increases as *r* moves away from zero towards -1 or 1, where a closer to zero *r* indicates a low degree of correlation (0= no relationship) and *r*=1 represents a perfect positive correlation (Yates *et al.* 2005:348, 352). Table 3.14 gives the results of the correlation analysis between total scores of Section A and Section B. For Section A, the

responses had been scored in terms of 1 for absence of risk and 2 for the presence of risk, meaning the higher the total score, the stronger the presence of risk factors. For section B, the responses had been scored in terms of 1 and 2 for resilience (presence of protective factors) and 3 and 4 for less-resilient (absence of protective factors), meaning the lower the total score, the stronger the resilience (see data preparation, 3.5.4). If *r* is positive, it therefore indicates a negative correlation.

Table 3.14: Correlation between the total scores of Section A and Section B

Variables	*r* Section A	*r* Section B	Correlation coefficient
Section a	1.0	0.24227	Pearson
	1.0	0.24711	Spearman
Section b	0.24227	1.0	Pearson
	0.24711	1.0	Spearman

Table 3.14 shows a weak positive correlation of *r*= 0.2 (Pearson and Spearman coefficients) between the total scores of Section A and Section B, i.e. the respondents who were exposed to more risk factors (Section A) showed somewhat less-resilience according to their higher total scores (Section B). Table 3.14 thus points out that the presence of many risk factors in the environment could have contributed to less-resilience in this sample of middle-adolescent respondents in the township schools. This finding corroborates the finding of Compas, Hinden and Gerhardt (1995:27) that risk impacts negatively on the competence of individuals and their resilience and exposure to chronic stress and adversity and lack of resources to mitigate the risk, leads to maladjustment and thus less-resilience. However, Masten and Obradović (2006:14, 19) on the other hand emphasise that resilience occurs in the context of adversity, where competence is viewed as good adaptation with a low adversity history and resilience as good adaptation and high adversity history. Less-resilience (maladaptive) is viewed as poor adaptation with the history of high adversity (Masten & Obradović 2006:19).

3.5.7.2 The effect of Section A-items on the total score of Section B

Table 3.14 has shown that the exposure to more risk impacts negatively on the resilience of the respondents. However, I was not certain if all the 11 risk items of Section A had a significant negative effect on the resilience of the respondents. BMDP Statistical Software was used to perform the BMDP3D T-Test between the items of Section A and the total score of Section B of the R-MATS. Overall, the BMDP3D provides two versions of the t-test for the equality of means, the POOLED T which assumes that the population variance of the two groups are equal and the SEPARATE T which does not assume that (as per explanation of the statistician). For the purpose of this study, I will only give analysis of the POOLED T test.

The LAVENE F (for analysis of variance and the variability between two means) and the POOLED T tests (for mean difference) were used to determine the statistical significance of the effect of Section A on the total score of Section B.

Using Section A responses, the respondents were divided into two groups for each item, the '*Yes'* and the '*No'* group. The '*Yes'* group had experienced the specific risk in their lives and the *'No'* group represented the 'normal' population who had not experienced the specific risk at the time of the research. Section A '*Yes*' can be likened to the 'experimental group' because they had been 'exposed' to a risk and the '*No*' group to the 'control group', represented the 'normal' population. Exposure to a risk could be seen to represent the 'experimental treatment' in this research and MEAN-B could be seen to represent the 'effect' of the 'treatment'. The significance of the effect of a risk factor on the resilience of the respondent was measured by the difference between the resilience mean of the 'Yes' and the 'No' group (Carver 1978:380).

Table 3.15: The significance of a risk factor on the resilience of respondents

Item	Mean yes	Mean no	Std dev		Number		*P*= poole t
			Yes	No	Yes	No	
One or more members of my family have a job	1.4809	1.4990	0.3784	0.2975	160	50	0.7564
I live in a brick house	1.4743	1.5001	0.3377	0.3839	106	102	0.6080
One or both my parents are still alive	1.4693	1.5754	0.3571	0.3739	180	30	0.1360
I fight a lot with other children at school	**1.8727**	**1.4578**	**0.3727**	**0.3440**	**13**	**199**	**0.0000***
The item is statistically significant at the 1% level of significance. It implies that fighting a lot with other children at school is likely to influence the resilience of the respondents negatively.							
I have enough food to eat at home	**1.4576**	**1.5707**	**0.3539**	**0.3666**	**164**	**48**	**0.0548*** **
The item is statistically significant at the10% level of significance. The results suggest that not having enough food to eat at home affected the resilience of the respondents in this study.							
I have many problems	**1.6162**	**1.4576**	**0.2906**	**0.3668**	**33**	**177**	**0.0198** **
The item is statistically significant at the 5% level of significance. It suggests that having many problems affected the resilience of the respondents.							
There is someone at home who abuses me	1.6083	1.4728	0.3293	0.3611	17	194	0.1370
I stay with one or both of my parents	1.4860	1.4768	0.3517	0.3899	164	47	0.8767
I feel I am treated badly at home	**1.5841**	**1.4592**	**0.3135**	**0.3580**	**31**	**179**	**0.0694*** **
The item is statistically significant at the 10% level of significance. It suggests that bad treatment at home affected the resilience of the respondents negatively. However, Item 7 (abuse at home) proved to be statistically insignificant, which suggests that respondents might have viewed bad treatment and abuse to mean different things.							

Item	Mean yes	Mean no	Std dev		Number		P= poole t
			Yes	No	Yes	No	
My life is very good	1.4695	1.5944	0.3609	0.3374	189	22	0.1236
I have repeated a grade at high school	**1.5718**	**1.4573**	**0.3983**	**0.3437**	**48**	**164**	**0.0517*** **
The item is statistically significant at the 10% level of significance. It suggests that repeating a grade had a negative influence on the resilience of the respondents.							

*≤1% level of significance
**≤5% level of significance
***≤10% level of significance

Table 3.15 supports the assumption that exposure to some type of risk would affect the resilience of the respondents negatively. Knowledge of the types of risk that influence the resilience of respondents negatively is important and contributes towards building a framework of factors to mitigate the risk when supporting the resilience of middle-adolescents in township schools.

The identified risk factors of Section A are among the common adversities in township and similar environments where the socio-economic factors of the family played a significant role in the access to social and public services. As a result, the R-MATS highlighted the external and internal factors that can be addressed to help support the resilience of middle-adolescents in a township school.

3.5.8 FACTOR ANALYSIS: SECTION B OF THE R-MATS

BMDP4M Statistical Software was used to do exploratory factor analysis on Section B of the R-MATS. The purpose of the exploratory factor analysis was to determine and explore the underlying factors that could help explain the relationships among the variables, to group the variables into common characteristics (group inter-correlated items together), to explain the variance in the observed variables and to assess the construct validity of the instrument (Pett, Lackey & Sullivan 2003:2-4). The item analysis which established the item-scale correlations conducted on Section B for 24 items, formed the basis for factor analysis, because the process helped to determine the factorability of items (Pett *et al.* 2003:87).

Pett *et al.* (2003:87) warn against retaining and discarding items based on item-scale correlation during item- analysis, because it might lead to problems during factor analysis. The authors (Pett *et al.* 2003:87) argue that only retaining items that have high item-scale correlations could lead to the problem of multicolinearity which might cause problems when determining the uniqueness of variables to a factor, which would then compel the researcher

to drop one or more of the high-correlated items from the analysis. On the other hand, if item-scale correlation is low (<0.3), there would be a problem of finding common items during factor analysis, so I finally opted for a 24-item factor analysis. A four factor analysis was conducted and the rotated factor loadings are illustrated in Table 3.16.

Table 3.16: Four Factor Analysis of Section B of the R-MATS

No	Item	Factor Loading			
		1	2	3	4
1	I have an adult to talk to at home, who listens to me	0.232	**0.269**	0.069	-0.002
2	I make sure that I do my classwork and homework	0.141	0.063	0.152	**0.395**
3	I do my best to find the right answer to a problem	0.094	0.223	0.236	-0.060
4	My teacher works hard to help me understand my work better	0.239	0.011	0.038	0.142
5	I am in control of what happens to me	**0.442**	-0.056	0.224	**-0.449**
6	I feel safe and loved at home, they want to know if I am OK	0.139	0.062	-0.022	**0.453**
7	Doing well at school is very important to me	0.184	-0.005	0.205	**0.455**
8	My future and success depend on my hard work	**0.311**	0.030	0.162	0.174
9	I believe that I have good talents	**0.613**	-0.006	-0.113	-0.124
10	I do not allow people to stop me from trying to do my best in my work	**0.339**	0.041	0.122	-0.025
11	I believe that I am able to do better	**0.587**	0.098	0.012	0.167
12	Even when my problems are just too much, I do not give up trying to make it work	0.025	0.217	**0.442**	-0.175
13	I know someone at school who cares about me and I can talk to	0.133	**0.434**	-0.042	-0.003
14	I use different ways to work out a difficult problem.	0.093	**0.269**	0.130	-0.046
15	There is at least one teacher I can talk to who listens to me and encourages me to do my best	-0.221	**1.066**	-0.084	0.155
16	I believe that one day things will be better for me	**0.638**	-0.054	-0.026	0.164
17	I do not like to be absent from school, I hate to miss the teaching	0.029	0.101	**0.388**	0.085
18	I know a good person whose behaviour is an example to me	**0.457**	0.021	0.019	0.054
19	Even when I do not understand in class I don't give up trying	-0.134	-0.095	**0.687**	0.119
20	My teachers made me see that I am good with my work and can do well in class	**0.485**	0.068	-0.011	0.142
21	My teachers support me to aim high and to think of my bright future	0.149	0.052	0.241	**0.375**
22	Teachers explain a lot in class, they give extra examples	0.225	0.082	0.050	-0.004
23	My future is in my hands, nobody can take that away from me	0.242	0.146	-0.029	0.033
24	I am a tough person	0.018	-0.036	**0.383**	-0.002
VARIANCE EXPLAINED BY THE FACTOR		2.397	1.650	1.284	1.137

Items that loaded strongly (≥.30) on a factor are in bold and underlined. Items 1 and 14 loaded weakly on Factor 2 (both 0.269) but even with their weak loading, they will be discussed under Factor 2 because they approach 0.3. Items 3, 4, 22 and 23 failed to load strongly on any factor.

3.5.8.1 Factor 1: Confidence and internal locus of control

Items that loaded strongly with Factor 1 are illustrated in Table 3.16 and Figure 3.5. Based on the description of the items and their grouping, Factor 1 can be defined to represent confidence in one's own ability and strength and the focus is on internal strengths to succeed in achieving set goals or one's future.

5. I am in control of what happens to me Confidence, internal locus of control, sense of awareness, taking charge, taking responsibility
8. My future and success depend on my hard work Goal driven, future perspective and commitment, confidence, responsibility, internal locus of control
9. I believe that I have good talents Confidence, awareness of talents and strengths, belief in own ability
10. I do not allow people to stop me from trying to do my best in my work Confidence, internal locus of control, responsibility, commitment, goal focused, belief in own ability and strengths
11. I believe that I am able to do better Confidence, goal orientation, awareness of strength and potential, belief in own ability and potential
16. I believe that one day things will be better for me Confidence, goal orientation (future-perspective), hope, optimism
18. I know a good person whose behaviour is an example to me OK with role models, taking ownership and responsibility to shape own future, future focus
20. My teachers made me see that I am good with my work and can do well in class Confidence in own ability, achievement orientation and goal focus, sense of being important (I matter to the teacher, even the teacher is aware of my strengths), internal locus of control

Figure 3.5: Factor 1: Confidence and internal locus of control

The factor-set of items indicate a sense of awareness of one's own strength and ability, an internal locus of control which is characterised by knowledge of one's ability and potential to achieve, e.g. 'I will not allow people to stop me'. A strong sense of confidence and focus on goals is portrayed, which could be represented by statements like 'I know how to succeed, I know I will succeed'. The items represent high expectations and confidence in one's potential and one's appeal to others, which could be summed by statements like 'I know what I am capable of', 'Others know what I am capable of', 'I am good'. The sense of responsibility is highlighted in the search for answers and in finding solutions which indicate a proactive

approach, a sense of duty, taking charge and acknowledging own strengths. The item of acknowledging role models indicates a sense of comfort in learning from others and following their guidance.

Joseph (1994:256) specifies that knowledge and trust in one's abilities and good judgement is a strength of resilient individuals and relates to positive self-concept. Maurer and Andrews (2000:966) explain that confidence is the best measure of self-efficacy and Rew and Horner (2003:382) confirm that confident adolescents tend to experience success and satisfaction in their social and academic life and less stress. Individuals who accept responsibility and take control of their actions, even in the presence of challenges, demonstrate internal locus of control (Vanderzee, Buunk & Sanderman 1997:1842).

3.5.8.2 Factor 2: Social support

Table 3.16 shows that Items 13 and 15 loaded strongly on Factor 2 and Items 1 and 14 had weaker loadings. Figure 3.7 gives an overview of items which grouped under this factor.

1. I have an adult to talk to at home, who listens to me Adult support and appeal, awareness of self-worth, feeling of importance 'I matter, someone listens when I talk'
13. I know someone at school who cares about me and I can talk to Knowledge and awareness of support, feeling of importance, 'Someone cares, listens when I talk', 'I matter', appeal to others
14. I use different ways to work out a difficult problem Flexibility, goal-orientation; solution focus, problem-solving, 'I have it in me to succeed', 'I am strategic and persevering'
15. There is at least one teacher I can talk to who listens to me and encourages me to do my best Adult (teacher) support, appeal to adults, sense of importance, 'I matter', motivation

Figure 3.6: Factor 2: Social support

Factor 2 indicates the ability to identify and utilise support (mostly adult support), also in relation to problems, and demonstrates a connection to competent people. The disposition to appeal to others and to be receptive is clearly demonstrated. The factor demonstrates the acknowledgement of attention from others, having someone who listens and being granted the opportunity to talk. The overall sense is to feel important, not alone, to matter, to have someone who cares and the assurance of where to go when in need of help. The sense of security and comfort of knowing where to access 'important people who care', demonstrates success in utilising available resources and being strategic in utilising them. The factor indicates initiative of approach, assumption of responsibility and assurance of success in

identifying and accessing available support and the ability to utilise it to advance one's healthy development and to achieve competence in the environment.

Social support is one of the resilience characteristics addressed in Figure 3.4. Werner and Smith (1982:97-98) confirmed that resilient children in their study had at least one adult person who cared about them, furthermore, literature indicates that developing resilience requires caring and supportive relationships (Johnson & Wiechelt 2004:661; Masten & Reed 2005:85; Thomsen 2002:17; Tusaie & Dyer 2004:4; Wang *et al.* 1994:56; Werner & Smith 1982:97-98).

3.5.8.3 Factor 3: Toughness and commitment

Table 3.16 and Figure 3.7 indicate that four items loaded on Factor 3. The items indicate hardiness, a sense of commitment and orientation towards achievement and performance, the focus is on working hard in order to succeed and never giving-up.

12. Even when my problems are just too much, I do not give up trying to make it work Toughness, perseverance, courage, problem-solving, goal-orientation, commitment, perseverance
17. I do not like to be absent from school, I hate to miss the teaching Commitment, goal-orientation, responsibility of own future
19. Even when I do not understand in class I don't give up trying Focus on achievement and solution, utilising own ability, perseverance, motivation, commitment, confidence, toughness
24. I am a tough person Toughness, self-confidence, resolution about strengths, pride in own ability, strengths and potential

Figure 3.7: Factor 3: Toughness and commitment

The theme of hardiness is strong in this factor with the commitment to achieving goals and a strong drive to succeed in overcoming problems. The factor illustrates perseverance, internal locus of control and responsibility for ones' own actions, which can be summed by statements as: 'I am tough', 'I can make it', 'It is my responsibility to succeed, achieve'. The factor shows confidence in one's own potentials and abilities and the focus is on gaining success. There is indication of toughness and the focus is on one's goals. The definition of resilience refers to bouncing back from a stressful situation, which demonstrates the toughness of an individual to revert to a former state of functioning instead of wallowing in pain and misery (Joseph 1994:25-33, Masten 2007:923). Resilient individuals remain tough because they do not allow stressful situations to dampen their spirit for ever, they bounce back.

3.5.8.4 Factor 4: Achievement orientation

Table 3.16 and Figure 3.8 indicate four items loaded on Factor 4. Factor 4 focuses on performance and achievements.

2. I make sure that I do my classwork and homework Achievement orientation, taking responsibility; goal-driven, goal-orientation, taking ownership, sense of control
6. I feel safe and loved at home, they want to know if I am OK Success, coping, achievement, 'I am important', awareness of self-worth, confidence, result focus
7. Doing well at school is very important to me Achievement orientation, goal-driven, future focus
21. My teachers support me to aim high and to think of my bright future Setting high expectations, achievement, goal focus, future focus

Figure 3.8: Factor 4: Achievement orientation

The items focus on succeeding, to ascertain a bright future. A strong drive and goal to succeed and a sense of achievement are demonstrated in the items. The factor shows determination to take ownership in order to achieve success and affirms one's strengths 'It is my responsibility to succeed, achieve', 'I have potential and I have high expectations'.

One of the resilience characteristics identified in the Resiliency Wheel is *Set and communicate high expectations*, which encompasses motivating learners and encouraging them to strive for their goals and to achieve their potential. Henderson and Milstein (2003:13) emphasise articulating high but realistic goals and positive expectations to learners as one of the resilience building factors. Henderson and Milstein (2003:13), Benard (1995:3) and Bosworth and Earthman (2002:301) stipulate that schools that practice and encourage high expectations of learners experience a high rate of academic success and a low rate of problem behaviour.

3.6 CONCLUSION

The chapter has discussed fully Phase 1 of the research process, which included the operationalisation of the resilience construct into designing the questionnaire (R-MATS), piloting, administration and testing of the consistency and validity of the questionnaire items for use by middle-adolescents in township schools. The decision to divide the R-MATS into Section A and B helped in determining the effect of specific risk factors on the resilience of the respondents.

Furthermore, the constructed resilience and risk items helped to delineate the risk and protective factors perceived present in the environment by the respondents. The R-MATS helped to position respondents into categories of resilience and less-resilience and their notion of resilience was demonstrated through statistical data analysis (item and factor analysis).

Various themes of risk and protection were identified from item analysis data which will be compared and contrasted with Phase Two data during triangulation of data in Chapter 5. Factor analysis helped to structure the R-MATS items into categories of resilience, which further helped to define the resilience characteristics highlighted in the factors. The four identified factors indicate how resilient and less-resilient middle-adolescent learners in township schools defined themselves, their relationship with their environment and how they interacted with their environment.

Partly, the chapter helped in answering the research question as it touched on how the respondents defined themselves in the context of their environment, how they interact with their environment and how they defined their roles. The resilient and less-resilient respondents who will be identified to participate in Phase 2 of the study will further help in elucidating the research question during IQA focus groups. Finally, the findings of Chapter 3 and 4 will be discussed against the two research frameworks discussed in Chapter 2.

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CHAPTER 4
Phase 2: The interactive qualitative analysis

4.1 INTRODUCTION

This chapter will discuss Phase Two of the research, the qualitative process, using the Interactive Qualitative Analysis (IQA) method. The research question will be interrogated using IQA focus groups and interviews. The selected identified resilient and less-resilient middle-adolescent learners from the two research schools will answer the main research question, '*How does the school influence the resilience of middle-adolescent learners in a black-only township school?'*

Firstly, the IQA will be discussed to reorientate the reader about this new research method and to briefly outline its prescribed and suggested research process. The discussion on the research design will include the IQA research process of data generation and construction, analysis and interpretation. In conclusion, the results and findings to the main research question of the study will be presented and discussed.

4.2 INTERACTIVE QUALITATIVE ANALYSIS

Interactive Qualitative Analysis is a systems approach to research developed by Northcutt and McCoy (2004). The techniques used in IQA are based on the Total Quality Management (TQM) literature (Northcutt & McCoy 2004:xiii). The focus of the IQA method is founded on the social systems theory and one of its main rationale, is to represent meanings of the phenomenon under study using affinities or elements and to illustrate the relationships that exist between them (Northcutt & McCoy 2004:xxi). A further purpose of the IQA method includes drawing a picture of the system represented by the group's perceptions as guided and motivated by the issue statement and captured through their mindmaps (Northcutt & McCoy 2004:xx, 149). The issue statement is used to operationalize the research question. The metaphor used by Northcutt and McCoy (2004:43) to represent the discourse of how a system is drawn from an IQA research process, is that of creating a 'quilt'. Using affinities during IQA focus groups, they declare that '*the purpose of IQA is to allow the group to create its own interpretive quilt, and then to similarly construct individual quilts of meaning'* (Northcutt & McCoy 2004:43). To elaborate on the analogy of IQA with the 'quilt', focus groups are used to identify elements of the 'quilt' (affinities) and the relationships that exist between the affinities represent the 'stitches' (Northcutt & McCoy 2004:44).

The initial step of the IQA in this phase is focus groups. Through focus groups, affinities will be generated in the process of collecting, organising and analysing data (Northcutt & McCoy 2004:xxi-xxii). Through the IQA method, provision will be made in Phase Two to identify different categories of meanings constructed by participants and to report on findings made by different groups of participants, the resilient middle-adolescents and the less-resilient middle-adolescent learners, about the relationship between their resilience and the school environment.

IQA functions from a constructivist and interpretivist approach (Northcutt & McCoy 2004:xxi). The constructivist approach acknowledges that participants are actively involved with constructing their own knowledge instead of just absorbing and receiving knowledge from others or a researcher in the case of this study (Harris & Graham 1994:233, Strommen & Lincoln 1992:468). Confrey (1990:108) defines constructivism by stating the origin of knowledge and inferring that all knowledge is the product of human cognition:

> *Constructivism can be described as essentially a theory about the limits of human knowledge, a belief that all knowledge is necessarily a product of our own cognitive acts. We can have no direct or unmediated knowledge of any external or objective reality. We construct our understanding through our experiences, and the character of our experience is influenced profoundly by our cognitive lenses.*

In IQA, the participants through the help of the researcher assume the role of both the researcher and participants in the research as they generate and interpret data collected during focus groups. Through Interpretivism, the study intends to understand the lived experiences of participants clarified during their deliberations, descriptions and interpretations of their interactions in their social context (Henning *et al.* 2004:19-20; Ritchie & Lewis 2003:7). Furthermore, the qualitative nature of the study alludes to interpretivism as it explores through the facilitative role of the researcher, the participants' understanding and knowledge (i.e. interpretation) of their social world, guided by the researcher's interpretation and understanding of the phenomenon under study (Ritchie & Lewis 2004:7).

A research process using the IQA method will normally follow four phases: research design, focus group, interviews and finally writing a report (Northcutt & McCoy 2004:44). The IQA focus group has several stages which will be fully discussed in 4.3. Figure 4.1 gives an indication of the research flow chart adapted from Northcutt and McCoy (2004) to illustrate the process which I followed when conducting the IQA focus group process.

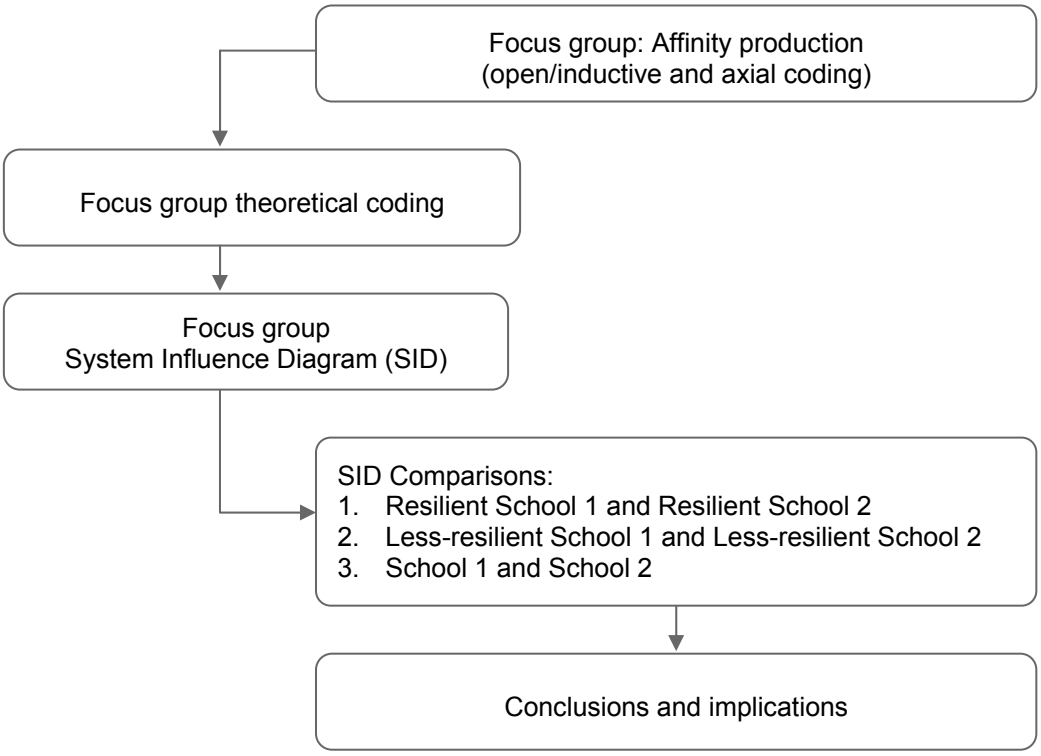

Figure 4.1: Data Collection Flow Chart (focus groups) (adapted from Northcutt & McCoy 2004:45)

4.3 DESCRIPTION OF THE METHOD

The IQA method follows a structured process arranged in a requisite sequence, starting from the research question that underlines the nature of the problem as the first step. The authors of IQA, Northcutt and McCoy (2004:44), provide data collection and analysis protocols 'designed to minimize erosion' and to help the researcher to guide the participants to generate and analyse data with minimal external influence. In defining the construct *research*, Northcutt and McCoy (2004:28) relate it to an activity that answers at most three questions in the order of the appearance below, namely:

- What are the components of the system?
- How are the components related to each other?
- How do the systems compare?

The third question only exists if the research has more than one system, however if there is only one system, as in this study, there will only be two questions asked.

This study focused on the social system (the school) and the existing interactions between resilient and less-resilient middle-adolescent learners and the school as a system. IQA defines social systems as 'systems in which human interpretation of meaning is involved' (Northcutt & McCoy 2004:40). The elements of the social system can represent the individual

(psychological or individual) characteristics, the systems' characteristics (programmes run and their structure) or the perceived interactions (relationships). Northcutt and McCoy (2004:40) indicate that the elements of the system are as diverse as the various ways of making meaning, but the relationship among the elements are consistent. The relationships (perceived relationships) among the elements, interpreted through the IQA method and process, demonstrate the perceived cause and effect or influence, delineating the pattern of influence among the elements in the form of a diagram (Northcutt & McCoy 2004:41).

4.4 RESEARCH DESIGN

4.4.1 PARTICIPANTS OF THE STUDY

Participants from School 1 and 2 were selected to participate in Phase Two of the study based on their resilience score (Mean of Section B of the R-MATS), the parents' consent and their willingness to participate in the research. Overall, eight participants per school were selected: four each from the lowest and highest means, respectively indicating a high and lesser degree of resilience. The selected resilient participants from School 1 had all obtained the resilience mean of 1 and the less-resilient participants a less-resilience mean of 2+, while the mean of the resilient and the less-resilient participants from School 2 varied between 1.04 - 1.16 and 1.95 - 2.37 (see Table 4.1).

Table 4.1: Focus Group Participants

School	Learner number	Mean of section b	Gender	Resilience status
			F/ M	RG/ LRG*
1	5	1	F	RG
	6	1	F	
	59	1	M	
	93	1	M	
1	24	2	M	LRG
	67	2.04	F	
	8	2.08	F	
	21	2.37	M	
2	261	1.04	F	RG
	167	1.12	M	
	183	1.16	M	
	252	1.16	F	

School	Learner number	Mean of section b	Gender	Resilience status
2	179	1.95	F	LRG
	176	2	F	
	203	2.04	M	
	238	2.37	M	

*RG: Resilient Group, LRG: Less-resilient Group

Focus groups were conducted after curricular activities (after school). The participants were informed about their selection to take part in focus groups and were given consent forms for parental permission. Not all initially selected participants were available, some parents declined their children's participation citing other responsibilities and commitments. It was not easy to access the selected participants from School 2, most were absent from school, the teacher discovered that some were no longer attending school and some learners did not return the parents' consent forms. The challenges were overcome by identifying participants who obtained the resilience mean score of ≤1.3 for the resilient group and ≥1.9 for the less-resilient group. The identified participants were willing to join the focus groups and their parents signed consent forms.

4.4.2 FOCUS GROUPS

Focus groups use 'guided interactional discussions, as a means to generate rich details of complex experiences and reasoning behind individual's actions, beliefs, perceptions and attitudes' (Powell & Single 1996:499-500). Reed and Payton (1997:765) define focus groups as group discussions organised to explore a specific issue as a collective activity. In IQA, focus groups serve to identify the characteristics of the systems (school context, home and community), the social contexts and representations of the participants' experiences with the phenomenon of the research within these contexts (Northcutt & McCoy 2004:44).

Two focus groups, each with four participants, that is 4 resilient and 4 less-resilient learners, and each group consisting of two boys and two girls, were conducted sequentially per school, i.e. School 1 was completed first followed by School 2, and 16 learners participated in the focus groups (see Table 4.2). The learners were not aware of their resilience status and the construct *resilience* was never used with the participants during the research.

Table 4.2: Focus Group Participants

Participants	School 1	School 2	
Resilient Group (RG)	4	4	
Less-Resilient Group (LRG)	4	4	
Total Participants	8	8	16

The use of smaller groups appeared convenient because the IQA process is long and required much commitment, consistency and regular, uninterrupted attendance of sessions by the participants. As a result, it was very important for participants to understand and commit to the sessions. Ritchie and Lewis (2004:59) maintain that smaller groups of pairs or triads can be used during focus groups and they can provide a good balance between group and individual context. The authors also indicate that such small groups can provide more 'scope for individual depth of focus as well as the opportunity to see how ideas develop'. Furthermore, small groups are more useful and effective when working with younger people and sensitive issues (Ritchie & Lewis 2004:59). In contrast, Northcutt and McCoy (2004:87) propose that the researcher should make an attempt to avoid using smaller groups for focus groups, not because they will affect affinity production, but to avoid skew data during theoretical coding. They assert that data become skew when for instance, the influence of one individual out of five in a focus group weighs 20% (Northcutt & McCoy 2004:87).

However, in this study, small groups proved more functional. As asserted by Ritchie and Lewis (2004:59), it was essential to ensure that participants were comfortable and contributed fully, because the exercise was rigorous and highly interactive. The focus groups each extended over several days (the pace of the participants determined the conclusion, and the time allocated required ensuring participants' safety when travelling home and ensuring they finish on time to allow for homework). Smaller groups allowed the participants the opportunity to be articulate and to participate fully in the discussions to produce more detailed discussion. The continuous discussion and interaction among the participants helped them to further refine and describe their perspectives especially against the backdrop of each other's experiences and this contributed towards generating creative thinking, solutions and strategies regarding the research question (Ritchie & Lewis 2004:58).

4.4.3 FOCUS GROUPS ISSUE STATEMENT

By using the issue statement IQA aims to guide and help participants to understand the research question especially at the level of their development and understanding.

The issue statement was used to deconstruct and operationalise the research question. The issue statement required the focus groups to engage and interrogate the research question and to generate affinities which can be perceived as related to the research question.

The issue statement was a guided imagery used as a warming-up exercise to help participants to relax, clear their minds and to introduce the research question (See Annexure E). Before embarking on the focus group discussions, the issue statement was piloted with two groups of learners (two learners per group). The aim of the pilot was to finetune the language used, and to discover if the statement was able to elicit required responses from the participants in exploring the research question. The feedback received from the pilot study helped in structuring the procedure for introducing the issue statement during the focus groups.

To achieve full participation, it was essential to ensure that the participants were relaxed before the start of the focus group. They all received printed copies of the issue statement, and then I requested them to relax, close their eyes and listen to my voice as I read the issue statement to them. This exercise required them to listen and visualise what was being read, to use their imagination and think about themselves and their environment. It requested them to have a brief recollection of their development from early childhood, including the experiences of growing-up, the challenges, strengths, successes and failures and the motivational forces that gave them the strength to want to make it and the challenges to 'want to' or to just 'give-up' trying or 'making it'. The imagery of their growth and development was associated with discovering the self, 'Who am I?' because it represented the story of their developing self. Questions were posed after the imagery to make participants aware that 'who they are' or 'what they are' is a product of years of development and success and various forms of adversities with possibilities of making it or failing.

The issue statement was drawn from the main research question:
How does the school influence the resilience of middle-adolescent learners in a black-only township school?

Against the background of the research question, the following questions were asked to elucidate the research question and to ensure that participants understood what was required of them during affinity generation:

(1) How does the school contribute to who you are?
(2) How does the school fail to contribute to who you are?
(3) What is it that the school does that makes you who you are?
(4) What is it that the school fails to do that affects who you are?

The affinities or themes generated during the focus groups related to the participants' experiences in relation to the research question.

4.4.4 IDENTIFICATION OF AFFINITIES

4.4.4.1 Affinity Generation: Silent nominal process

Themes, which Northcutt and McCoy (2004:81) term affinities, were generated with each focus group. Generation of affinities started with the silent nominal phase, the brainstorming session which encouraged the participants to produce individual thoughts, feelings and ideas (Northcutt & McCoy 2004:91). Hackman and Wageman (1995:314) indicate that brainstorming is used to generate ideas and its purpose is to 'tap on the creativity' of the participants. After the issue statement, the participants were provided with index cards and marking pens, to write or place their thoughts either as a word, a phrase or sentence (Northcutt & McCoy 2004:91). They were instructed to work alone and write one thought, phrase, word or sentence per card and to write as many cards as they could. There was no time-limit for this activity. I encouraged them not to sensor their thinking but to simply write down their thoughts as they came to mind. When all participants had finished writing, they silently and randomly pasted their cards on the white board on the classroom wall. I read each card out aloud for clarity. The group members had to elaborate on affinities which were unclear and write new meanings on the card. During this process of data clarification, if new thoughts developed, participants were encouraged to capture them on new cards and to paste them on the wall. The nominal phase led to the affinity grouping.

4.4.4.2 Affinity Grouping: Coding of affinities into groups

This phase of the focus group activity required participants to arrange the cards with similar meanings into groups. This process is called inductive coding and followed the previous phase of broad generalisation of affinities by working from specific to general (Northcutt & McCoy 2004:97). Firstly, each participant was required to silently move cards with similar ideas or meaning into one group. When the activity had progressed far enough to require negotiation, they were allowed to discuss and reach consensus, without voting on the grouping of cards. I guided them into engaging in full discussions before reaching consensus about the groupings or themes.

4.4.4.3 Axial Coding: Affinity naming

After inductive coding, the participants were requested to label the affinities, refine their meaning, and to generate names or titles for the affinity groups (Northcutt & McCoy 2004:99). Naming of affinities was deductive because it required them to be more specific

and to deduce the affinity name from the meaning of the multiple cards represented in that particular group (Northcutt & McCoy 2004:100). The process took more time because it required the researcher to capture data as the participants were talking and to seek clarity when required. A paragraph was written about each theme using the index cards and their discussions, after which it was brought back to the participants the following day for further discussion and consensus.

Northcutt and McCoy (2004:100) stipulate that paragraphs should be descriptive and 'grounded in the text' and use specific quotes of data collected from index cards or participants' conversation during discussions. When describing the affinity themes, I had to be clear and direct and remain faithful to the language used by the participants and consult them for clarity and input (Northcutt & McCoy 2004:100).

The writing of paragraphs continued until the participants were satisfied with the definitions provided and were able to use the meanings for the next activity, theoretical coding. Figure 4.2 gives the description of affinities generated by the participants during the four focus groups in the two schools. The figure illustrates affinities generated by RG1 (Resilient Group 1, the resilient group from School1), RG2 (Resilient Group 2, from School2), LRG1 (Less-resilient Group 1, the less-resilient group from School 1) and LRG 2 (Less-resilient Group 2, from School 2). The definition of each affinity from literature and dictionaries is provided to background the affinity generated by the participants and to position their interpretations and constructions of their affinities against the existing constructs.

Participants' definition	Literature definition
RG1	
Positive Future Goals in life	
The affinity is about future goals and aims in life. It is about what learners want to be in life and their future. It concerns doing and achieving something good for oneself, to help oneself and others. Successful future goals include positive achievements and not failure. It is about something that one really wants to achieve, about one's dreams. A person thinks or prepares from the start of schooling about what one wants to be in the future, and prepares oneself to achieve and accomplish gaols and to access what one wants to be. A goal is about achieving a better life for oneself, reaching out to others for service, and enriching one's significant others with one's success.	To harbour a belief that life has meaning and one has a place and role to play in the universe (Kumpfer 1999:198, Joseph 1994:16). To be optimistic, have goal and direction (Joseph 1994:16). To have achievement motivation, educational aspirations, special interests, imagination, hope, creativity, coherence and a sense of meaning (Joseph 1994:16, Benard 2004:28-35, Kumpfer 1999:198). Positive aspirations for the future (Shanahan & Flaherty 2001:389).
Challenges in life	
This affinity is about barriers or obstacles one experiences in one's daily life, both at school, in the community and in one's home. It includes struggling to make decisions to work hard and to overcome bad influences of peers by doing good things. Challenges include the importance and need to avoid parental criticism, judgements and dissatisfaction over	A challenge is something that by its nature or character serves as a call to battle or contest and requires a special effort (Dictionary.com 2009). It is a test of somebody's abilities, or a situation that tests somebody's abilities in a stimulating way (Encarta World English Dictionary 1998-

Participants' definition	Literature definition
one's alleged bad choices and decisions over relationships and peer relations. There are many challenges in life. Most challenges are about friends (peer-relationships) and schoolwork, especially when moral and value choices have to be made. Bad friends are more challenging because they demand one to do bad things to fit in, e.g. girls having relationships with older men, businessmen or men with cars and for boys, smoking. To be a good influence to bad friends is a challenge, one has to work hard to convince them to do the right thing. On the other hand, if one is bad and one has good friends, they might change one to be good just like them. Good friends will benefit one more at school because one can do school work and teachers like learners who do their work.	2005).
School environment	
This affinity is about the school environment and its influence on teaching and learning and social development. It relates to the environment that promotes positive feelings towards school, e.g. feelings of love and enjoyment and the environment that is supportive to the needs of learners. Learners see the school as a protection from engaging in delinquent behaviours, protecting them from crime, and as a learning environment that imparts and provides knowledge to learners about life. The school environment promotes and creates order and structure, e.g. '*if there was no school there will not be order because we will all stay at home and do nothing'.* It is also seen as a structured environment that educates, gives direction, shapes future goals and helps in the development of the learner, e.g. '*school gives you direction and shapes your future, it is important'.* The relationship that exists between learners and teachers impacts on the quality of support offered and received. A supportive school environment is about encouragement, care and protection of the learners' needs.	Environment refers to the ecology, all external factors surrounding and affecting a given organism at any time; the social and cultural forces that shape the life of a person or a population; the aggregate of surrounding things, conditions, or influences; surrounding milieu. (Dictionary.Com 2009).
Adolescence	
This affinity is about the developmental stage of adolescence and the challenges one is exposed to, including peer-pressure and peer-relationships. An adolescent is in the stage (transitional period) of moving from being a child (childhood) to being an adult (adulthood). Teenagers experience more peer-pressure from friends especially when one does not agree with them or with what they want to do e.g. '*sometimes when we change classes friends will want you to bunk classes and go stand somewhere or hide with them, when you resist they call you names like Miss Goody Two-Shoes'*. '*Sometimes there is so much pressure to choose between friends and schoolwork, you have to make a choice'.* The affinity is also about challenges experienced when relating with adults, '*there can be relationship problems between parents and teenagers'* e.g. teenagers can disrespect their parents by not listening to their advice and wanting to do their own thing and assert their independence. '*Teenagers want someone who will understand them and whom they understand too'. 'Parents and adults need to learn how to talk to teenagers and to respect them'*.	Adolescence is a period of transition between childhood and adulthood, it is a developmental bridge between being a child and becoming an adult (Louw & Louw 2007:278).
School Rules	
This affinity is about knowledge, understanding and respect for the school's code of conduct. It acknowledges that school rules should not be questioned and should be respected. The understanding that as high school learners, sharing boundaries with a primary school, one should be a	Rules are principles or regulations governing conduct, action, procedure and arrangement (Dictionary.com 2009).

Participants' definition	Literature definition
role model and good example to the primary school learners by always observing school rules. Criticism by girls of some school rules which were perceived to be unfair emerged, e.g. not being allowed to wear earrings. The 'unfair' rules were not acknowledged or accepted and were poorly enforced by teachers leading to inconsistency e.g. '*some teachers are strict and adhere to the code of conduct while others do not*.' Another criticism emerged about exclusion of learners from the process of developing or negotiating for school rules e.g. '*school management is not allowed to make rules without consulting learners'*. Some rules were perceived to be OK, e.g. forbidding other forms of body piercing like tongue piercing and respect for wearing school uniform.	
RG2	
Education	
This affinity is about teaching and learning and getting more knowledge. School gives learners the chance to learn and be educated. Education gives one the chance to be something in life. The good thing about school is after completing each grade, one becomes better. The progress at the end of Grade 12 gives one the opportunity to study for one's career. What is learned daily becomes very important for one's future. Education is essential for a brighter future. At school, one does not just learn about school subjects, one also experiences more things, e.g. like sports, culture and discipline (manners). School also teaches one about one's culture and roots, the past and understanding of where one comes from and how to understand one's culture better, but it is sad that Arts and Culture ends with Grade 9 and is not offered in Grades 10-12.	Education is the act or process of imparting or acquiring knowledge through teaching and learning especially at school, developing the powers of reasoning and judgment, and generally of preparing oneself or others intellectually for mature life (Dictionary.com 2009).
Reaching one's goals	
School teaches about many things, like success and how to succeed in reaching one's goals and dreams. Goals are about dreams and education is the one and only tool to help in reaching goals. The experiences of youths searching for dreams without investing in education are seen to be dire to their future. The security of enjoying future goals is education. Entertainment industries are seen as inviting but malicious because most youths yearn for fame and fortune without realising that fame and fortune fade. The industry is labelled 'cut-throat' entertainment industry which is not easy to survive. Most young people are seen to quit school to join the world of entertainment for only 'one reason', to become famous and drive expensive cars without investing in education which should be a back-up should everything else fail.	Goals refer to the result or achievement toward which effort is directed; aim; end (Dictionary.com 2009). Reaching goals refers to working towards achieving a targeted purpose or aim. Reaching goals requires one to persevere and function against the odds; to tolerate a certain degree of frustration in the process of pursuing one's aims (Joseph 1994:30, 39)
School Curriculum	
This affinity is about school curriculum and its importance to the future of learners. Teaching and education include school subjects, they are what teachers use to teach, and to help learners learn e.g. if one is good at Maths, English, Accounting, etc., one gets respect from the teacher and other learners. They know one works hard to get good marks, when one does well at school, other learners ask one to explain in class. School curriculum helps learners to understand more about oneself, one's roots and cultural practices and other cultures, it also gives one the foundation about what one wants to be, e.g. one learns about what one could be if one followed certain subjects.	A curriculum is the set of courses, and their content, offered at a school; it refers to (i) the range of courses from which students choose what subject matters to study, and (ii) a specific learning programme. A school curriculum is offered at an institution that allows and encourages learners to learn, under the supervision of teachers (Reference.com 2009).

Participants' definition	Literature definition
Ensuring Care and safety	
This affinity is about the role of the school in ensuring care and safety of learners by enforcing discipline, school rules and maintaining order. School teaches about manners through school rules, e.g. respect for other learners, teachers, oneself, etc. Learners define safety as being free from danger and problems. Feeling free from fear of bad experiences or not experiencing fearful thoughts of something bad that can happen to oneself. Safety is about feeling secure and confident that nothing bad will harm oneself, and that nothing bad from outside will come into the school to hurt oneself e.g. '*it is very important for me to come to school as I am, sharp and go home sharp*'. Learners viewed care as modelled behaviour e.g. '*care is observed in the way teachers treat and respect us and how we treat and respect each other*', and '*when teachers treat us well we also learn to treat others well*'. Teachers model care because when they teach learners how to care for oneself, one learns to practise the behaviour at school and at home	To ensure care involves being concerned or interested, to provide needed assistance or watchful supervision (Dictionary.com 2009). To ensure safety includes doing activities that seek to minimize or to eliminate hazardous conditions that can cause bodily injury (Reference.com 2009). Ensuring care and safety involves providing assistance to prevent harm to individuals.
School resources	
This affinity is about the resources that are available at school for one to use. The affinity includes the dissatisfaction about unused resources, e.g. the school library, and the computer laboratory that was reserved for Grade 11 & 12 learners. E.g. '*We are not able to do school assignments because the library is never open and we are forced go far to use the community library.' 'Some teachers abuse you when you ask information, they do not want to explain more and how will you understand what they are teaching if you are not able to use the library*?' '*We have computers at school but we are not allowed to use them, only teachers and Grade 11-12 are allowed to use computers, it is frustrating because we want to learn so much about the things that we do not understand and new things but here at school we are denied the chance to do that'.* Learners stated the school had sufficient resources that were mostly inaccessible.	Resources refer to things that can be used for support or help, a source of supply, support, or aid, especially one that can be readily drawn upon when needed, property, assets (Dictionary.com 2009). School resources refer to assets of the school.
LRG 1	
Being friendly	
The affinity is about social relations and having the right attitude. It is about respect for others and modelling respect. A friendly person is someone who is able to live and work well with people and to live with them in peace without fighting. The school creates a social environment for one to meet new people, to know each other, and to be friends. One learns to help and to live well with others without fighting, to listen to teachers and to do school work. People love a friendly person, and such an individual will have a successful and better life. The school creates the opportunity for different people to work together, but some are rude and do not like to work well with others. Some learners have power and control others, especially when teachers are not looking. Rude learners do not like peace, but chaos and disorder. One who is not friendly has a bad attitude. The attitude one has towards other people can make one to respect and treat others well or to be rude and hurt others.	Being friendly involves being sympathetic and showing relationship; one who shows no hostility, an individual who is favourably disposed; inclined to approve, help, or support others (Dictionary.com 2009). Being friendly involves being inclined to help and support others.

Participants' definition	Literature definition
Bullying	
The affinity is dichotomous to being friendly it is about being a bad person, bullying and turning 'evil'. A bully is not a good or a friendly person, but a naughty and delinquent person. A bully will steal, behave badly and do unacceptable things. Older learners who are in Grade 11-12 are bullies. Grade 10 has bullies but they are not as bad as older learners. '*Some learners at school are bad, they smoke at school and do all bad things.*' '*They beat others, take your money, lunch and even steal your school bag, during breaks when we go to toilets you find bullies hanging there smoking cigarettes and dagga', 'The boys' toilets are worse they are full of smoke and you cannot walk in, they are cloudy and you cannot see where you are going*'.	Bullying is deliberate, conscious desire to hurt, threaten and frighten someone (Louw & Louw 2007:261). Bullying includes physical (beating, threats of violence), emotional (spreading rumours, terrorising, defaming), verbal (name-calling, threats), non-verbal (offensive signs, pulling face), relational (excluding, ostracising, maltreatment) and sexual (sexual harassment) (Louw & Louw 2007:261-262)
Socialisation	
This affinity is about socialisation, how one was raised, one's values and culture. During the upbringing, parents teach one how to behave in certain ways and how to respect others. Parents need to teach their children to respect the rights of others to exist and encourage them to learn to coexist and share with other children and most importantly, teach them humility. At home, most children learn that there are other people to share the resources with, which teaches one not to be selfish and dominate others. A selfish attitude is not admirable, is rude and not considered a socialised behaviour. '*You cannot just want to walk over other people and enjoy it when others fear you and run around when they see you', 'As a person, I do not want to be like that, I want to be equal with other people and I do not want to think that I am better or above others'. 'Better people do not forget where they come from, they know their roots', 'The secret of being successful lies in being humble and knowing where you come from'.*	Socialisation is a process by which the child learns to conform to the moral standards, role expectations and requirements for acceptable behaviour of his or her particular community or culture (Louw & Louw 2007:138-139).
Challenges	
The affinity relates to the problems one experiences in one's environment (home and school), like poverty e.g. '*When you are poor you do not have money and you come to school without lunch or lunch money*'. Teachers can also help by providing problem solving strategies, '*The school help (sic) us because sometimes when we have problems from home we can tell one teacher and he/she can help you with the solution*'. Challenges include lack of support from home, '*At home* they *might not want to help you with homework and your parents might not be working and no money for school fees'*. Sometimes challenges can be addressed by showing kindness and sharing resources with those who have none and by giving one a shoulder to lean on when in trouble. '*At school you can help other children who come to school without lunch money or with nothing to eat, you share your money with them e.g. if you have R10 you can give him/her R5.00'*. '*You can also be good in school by helping other children who are being bullied you can comfort them and tell them that it will get better*'.	A challenge is something that by its nature or character serves as a call to battle or contest and requires a special effort (Dictionary.com 2009). It is a test of somebody's abilities, or a situation that tests somebody's abilities in a stimulating way (Encarta World English Dictionary 1998-2005).
Future Goals (what I want to be when I grow-up)	
This affinity is about what one wants to be when one grows-up. It is about reaching goals and doing the job one wants. Future goals and dreams are seen as collective efforts and achievements where significant others are able to share in the joy of each other. The school gives one the opportunity to have a good future and to learn. The subjects one takes at school shape one to be able to have a good future e.g. *'Maths, Accounting and Business economics can help you if*	To harbour a belief that life has meaning and one has a place and role to play in the universe (Kumpfer 1999:198, Joseph 1994:16). To be optimistic, have goal and direction (Joseph 1994:16). To have achievement motivation, educational aspirations, special interests, imagination, hope, creativity, coherence and a sense of meaning (Joseph 1994:16, Benard

Participants' definition	Literature definition
you want to have your own business because you will know how to budget and count money'. Having a good future is compared to enjoying good life with the people one loves. When one is happy because one has achieved one's goals and dreams, all the loved ones share in the happiness.	2004:28-35, Kumpfer 1999:198). Positive aspirations for the future (Shanahan & Flaherty 2001:389).
LRG 2	
Self-development	
This affinity is about what one can achieve and accomplish at school, it is about growth and development. It emphasises that at school one can achieve a lot if one has respect for teachers, rules and other learners. It emphasises positive development and being a better person. The school gives one the opportunity to grow and be better than one was when one started school. Being a better person is about learning to respect others and acknowledging the important role other people play in one's life. '*You have to respect other people who will also respect you and by so doing you gain your respect'*. It is also about the role one can play at school, like wanting to be part of the student body, e.g. president of the Learners' Representative Council (LRC), a class representative, etc. Being a better person requires change, improvement and behaving in a better way, e.g. '*Change in behaviour and accepting that what you used to be is bad makes you a better person because you are brave enough to accept your own mistakes and see right from wrong'*.	Self-development refers to the development of one's capabilities or potentialities (Dictionary.com 2009). It is a self-guided improvement, which could be economically, intellectually, or emotionally, psychologically and spiritually (Reference.com 2009).
Self-identity	
The affinity is about growing and developing into the kind of person one wants to be. It is about self-discovery and self-knowledge, like who one is and what one stands for in life e.g. one's values, needs and beliefs. It also includes knowing what one is going to be when one grows-up. It is about discovering more about oneself (self-discovery) and learning to understand oneself. Not all learners will develop in the same way because it is a choice each learner makes. Some learners do not change, they continue doing bad things and they do not see the light. So being at school does not benefit all learners the same and learners also make different choices about what they want to be at school. '*Knowing who you are is important because you must be proud of yourself and be who you are'. 'You must not pretend to be something you are not, be proud of who you are'. 'You need to behave and learn how to communicate so that you can be what you want to be in your life'.*	Identity refers to the individual's awareness of him or herself as an independent, unique person with special place in society (Louw & Louw 2007:309). Identity development implies the need to define ' Who' you are, 'What' is important to you and What' directions you want to take in your life (Louw & Louw 2007:309).
Reaching goals	
This affinity is about reaching what one wants to be and knowing about the rewards of realizing one's goals. The school makes one to study hard so that one can be able to reach one's goals, e.g. '*This school made me to start to work hard to make my dreams come true like singing'.* Education is very important because without education one cannot achieve one's goals. '*The school helped me to think for myself and helped me to see my future.'* Education is important for one to realise one's goals, e.g. '*The school helps me to become something in this country'.* One also learns about respect for teachers, other learners and oneself e.g. '*They showed me how to take care of other people so that I can be a policeman, so that I can take care of others'.* The school also teaches one to be a good person and protects one from doing bad things e.g. drinking, smoking, stealing and swearing.	Goals refer to the result or achievement toward which effort is directed; aim; end (Dictionary.com 2009). Reaching goals refers to working towards achieving targeted purpose or aim. Reaching goals requires one to persevere and function against the odds; to tolerate a certain degree of frustration in the process of pursuing your aims (Joseph 1994:30, 39)

Participants' definition	Literature definition
School curriculum	
This affinity is about the subjects offered at school. Learners acknowledge that school subjects are important in shaping one's future. It is important for the school to provide subjects that will facilitate future success. Subjects like music and computer literacy (computer lessons) are seen to be essential for one's success and it is regrettable if one does not have the opportunity to learn the subjects. '*The school does not offer all the subjects that we want, not having subjects you want (singing, computer lessons) is frustrating'. 'It sometimes makes going to school useless because you do not learn all the things you want to learn'*. '*What is the use of going to school all your life and still not have the choice to learn what you want'*?	A curriculum is the set of courses, and their content, offered at a school; it refers to the range of courses from which students choose what subject matters to study, and (ii) a specific learning programme (Reference.com 2009). A school curriculum is offered at an institution that allows and encourages learners to learn, under the supervision of teachers.
School resources	
This affinity is about access to school facilities, e.g. the use of computers and library facilities. The school resources are meant to help one learn better so that one can be a better person, but one is not allowed to use the library and to learn with computers. Learners view the lack of access to resources as an impediment to their performance in school, '*We share school books, and there is not enough books'.'The school does not open the library to read books.' 'When we do homework and classwork we can use the library to get more information but it is never open.' 'We do not know how to use computers, they never give us a chance.'* Learners indicated frustration and helplessness about the school's decision to deny them access to available resources.	Resources refer to things that can be used for support or help, a source of supply, support, or aid, especially one that can be readily drawn upon when needed, property, assets (Dictionary.com 2009). School resources refer to assets of the school.

Figure 4.2: Description of focus groups affinities

4.4.4.4 Affinity Name Table

The Affinity Name Table is a visual representation and the labelling of the affinities identified during axial coding (Northcutt & McCoy 2004:98). The affinities from the above paragraph description and narratives of each focus group were captured and presented to the participants. The process followed after the participants had finalised the affinity naming and were satisfied with the paragraphs written. The names were captured sequentially (the order did not reflect importance or significance) starting with the first one and presenting them to participants so that they could be acquainted with the affinities they had generated. Each participant then received a table with the affinity names of his/her focus group for theoretical coding. The Affinity Name Tables listed below show the affinities from the four focus groups conducted in the two schools as discussed in Figure 4.2.

Affinity Names RG1*	**Affinity Names RG2****
1. Positive future goals	1. Education
2. Challenges in life	2. Reaching one's goals
3. School environment	3. School curriculum
4. Adolescence	4. Ensuring care and safety
5. School rules	5. School resources
Affinity Names LRG1*	**Affinity Names LRG2****
1. Being friendly	1. Self-development
2. Bullying	2. Self-identify
3. Socialisation	3. Reaching goals
4. Challenges	4. School curriculum
5. Future goals	5. School resources

*Resilient Group School 1 / **Resilient Group School 2
*Less-resilient Group School / ** Less-resilient Group School 2

Figure 4.3: Affinity Name Table (adapted from Northcutt & McCoy 2004:151)

4.4.4.5 Theoretical coding: Identifying relationships between affinities

Using the Affinity Name Table, I then explained to the participants how to identify the relationship between the affinities in terms of cause and effect using the Affinity Relationship Table (ART). Northcutt and McCoy (2004:149) define theoretical coding as 'ascertaining the perceived cause and effect relationship among all affinities in a system'. The process includes 'teaching' the participants about determining the cause and effect relationship of affinities, using 'if' and 'then' (if/then) statements with every pair of affinities (see Appendix F). Northcutt and McCoy (2004:150) refer to the 'if/then' coding as the Hypothesis Building Protocol or hypothesis construction.

The Total Quality Management literature refers to the cause-and-effect diagram as also a fishbone which is used to represent the relationship between a problem and its potential causes (Hackman & Wageman 1995:314). The ART of Northcutt and McCoy (2004:151) (see Figure 4.4) illustrates three types of relationships that can be inferred from the affinities, that is participants can choose whether, in the case of this study, 1 influences 2 (1→2), or 2 leads to 1 (1←2) or there is no relationship between 1 and 2 (1<>2). For the purpose of this study, numbers (1 and 2) instead of alphabets, A and B are used to represent relationships.

Possible Relationships
1 → 2 (1 influences 2)
1 ← 2 (2 influences 1)
1 <> 2 (No Relationship)

Figure 4.4: Affinity Relationship Table (adapted from Northcutt & McCoy 2004:151)

4.5 AFFINITY ANALYSIS RESILIENT GROUP SCHOOL 1

4.5.1 AFFINITY RELATIONSHIP TABLES: RG1

The initial step required participants to determine and record the direction of the relationship between affinities if there was any, using the ART, and to explain the relationship by creating the 'if/then' statements for each relationship (Northcutt & McCoy 2004:154). The final result, which was captured by the researcher, came from the voting of participants, as the group consensus. IQA uses Pareto rule of thumb to achieve consensus (Northcutt & McCoy 2004:157). Northcutt and McCoy (2004:157) argue that group consensus is key to good data. I will first present the full discussion of the RG1 process before presenting RG2, LRG1 and 2, so that the last groups to be presented will simply include tables and figures. See Table 4.3 for the ART generated by RG1.

The frequency columns captured the votes of participants about the direction of the Affinity Pair Relationship and the no-relationship vote was not captured, which makes up for the missing votes.

Table 4.3: Affinity Relationship Table: RG1

Affinity Name RG1	**Possible Relationships**
1. Positive future goals 2. Challenges in life 3. School environment 4. Adolescence 5. School Rules.	1 → 2 1 ← 2 1 <> 2 (No Relationship)

ART with Theoretical Code Frequency Table			
Affinity Pair Relationship	Frequency	Affinity Pair Relationship	Frequency
1 → 2	0	2 ← 4	3
1 ← 2	4	2 → 5	0
1 → 3	0	2 ← 5	0
1 ← 3	4	3 → 4	4
1 → 4	0	3 ← 4	0
1 ← 4	3	3 → 5	1
1 → 5	0	3 ← 5	3
1 ← 5	4	4 → 5	4
2 → 3	0	4 ← 5	0
2 ← 3	3		
2 → 4	0		

Northcutt and McCoy (2004:156) state that when the ART is completed, the focus group can be dismissed, to allow the researcher to code and analyse the data using IQA maps and tables. Two participants (a boy and a girl) were identified from each focus group (based on their level of participation, .i.e. the highly active and eloquent participants) to participate later in interviews which were planned for focus group follow-up to help clarify data.

4.5.2 PARETO ANALYSIS: RG1

The Pareto Principle is based on the observation of an Italian economist, Vilfredo Pareto (1848-1923), who demonstrated that 80% of the wealth of the nation was distributed among the 20% of the population who represented the 'vital few', and the remaining 20% of the nation's wealth was distributed among the remaining 80% of the population, the 'trivial many' (Craft & Leake 2002:729). The Pareto Principle merely states that 20% of the participants' input produces 80% of the results. According to Craft and Leake (2002:730), the Pareto Principle is applied to most situations that have a cause and effect relationship as it involves

> *... discovering the factors causing the results and arranging them in order of their impact on the result and isolating the top 20% for further analysis and action.*

Northcutt and McCoy (2004:157) elaborate further, that when applying the Pareto Principle,

> *…it is quite likely that there will be some disagreement among either individuals or subgroups about the nature of a given relationship. IQA uses the Pareto rule of thumb operationally to achieve consensus and analytically to create a statistical group composite.*

The Pareto Cumulative Frequency Chart provides an efficient and satisfying method for achieving consensus to group members who find themselves in an initial stage of disagreement (Northcutt & McCoy 2004:157). Hackman and Wageman (1995:314), arguing from the TQM perspective, state that Pareto analysis is used to 'identify the major factors that contribute to a problem and to distinguish the vital few from the trivial many causes'. Table 4.4 illustrates the frequency of affinities in descending order with Pareto and Power analysis.

Table 4.4: RG1: Pareto Protocol: RG1

Affinity Pair Relationship	Frequency Sorted (Descending)	Cumulative Frequency	Cumulative Percent (Relation)	Cumulative Percent (Frequency)	Power
		*	**	***	****
1 < 2	4	4	5.0	12.1	7.1
1 < 3	4	8	10.0	24.2	14.2

Affinity Pair Relationship	Frequency Sorted (Descending)	Cumulative Frequency	Cumulative Percent (Relation)	Cumulative Percent (Frequency)	Power
		*	**	***	****
1 < 5	4	12	15.0	36.4	21.4
3 > 4	4	16	20.0	48.5	28.5
4 > 5	4	20	25.0	60.6	35.6
1 < 4	3	23	30.0	69.7	39.7
2 < 3	3	26	35.0	78.8	43.8
2 < 4	3	29	40.0	87.9	47.9
3 < 5	3	32	45.0	97.0	52.0
3 > 5	1	33	50.0	100.0	50.0
1 > 2	0	33	55.0	100.0	45.0
1 > 3	0	33	60.0	100.0	40.0
1 > 4	0	33	65.0	100.0	35.0
1 > 5	0	33	70.0	100.0	30.0
2 > 3	0	33	75.0	100.0	25.0
2 > 4	0	33	80.0	100.0	20.0
2 > 5	0	33	85.0	100.0	15.0
2 < 5	0	33	90.0	100.0	10.0
3 < 4	0	33	95.0	100.0	5.0
4 < 5	0	33	100.0	100.0	0.0
Total Frequency	**33**	Equals Total Frequency	Equals 100%	Equals 100%	Power = E-D

*Running total, frequency of votes for an affinity pair added to the previous total
**Cumulative percentage based on the number of total possible relationships (each relationship represents 1/20)
***Cumulative percentage based on the number of votes cast (33)
****Power is the degree of optimization of the system, the difference between cumulative percent (frequency) and cumulative percent (relation)

4.5.3 AMBIGUOUS RELATIONSHIPS

Northcutt and McCoy (204:161-162) explain that ambiguous relationships occur during theoretical coding when the participants suggest opposite relationships to a pair of affinities e.g. A→B and A←B. The authors indicate that during Pareto Analysis this conflicting argument is not resolved. Ambiguous relationships occur when participants are not able to identify another affinity that might intervene between or interact with the two existing affinities, leading to the group identifying a direct relationship between a pair of affinities while in fact, the relationship is indirect (Northcutt & McCoy 2004:162). The authors hypothesise that a 'third affinity, C' topology might cast some light, if both affinities A and B

are the result of an undetected common influence affinity 'C' or undetected feedback loop 'C' which will covary in some meaningful way (Northcutt & McCoy 2004:162). The ambiguity is resolved by 'coding the ambiguous relationship with the highest frequency with the appropriate arrow and coding the relationship with the smaller frequency with a question mark (?)', i.e. putting the ambiguous relationships into 'suspension' to allow the creation of the System Influence Diagram (SID) using the unambiguous relationships (Northcutt & McCoy 2004:163). Using columns 1 and 2 of the Pareto Protocol table (Table 4.4), the relationships that represent roughly 80% of the variation are selected for conflict analysis. Column 5 represents the cumulative percentage which guides the 80% selection. In the selected relationship for Table 4.4, the RG1 is reflected up to 97%. The Pareto Protocol instructions state, 'When the percentage reaches 80%, note the Frequency number in Column 2. This is the cutoff for acceptable affinity relationships. If the same frequency number continues beyond 80% the cutoff is where the next frequency number value changes'. Therefore, the cutoff for RG1 reflected all the relationships up to 97%.

The ambiguous relationships are made of conflicting relationships with arrows facing both directions. The RG1 did not have conflicting relationships.

4.5.4 CREATING A GROUP COMPOSITE: THE INTERRELATIONSHIP DIAGRAM (IRD), RG1

The Interrelationship diagram (IRD) is a step that aims to summarize the focus group activity and rationalise the system, by displaying arrows that 'show whether an affinity in a pair is a perceived cause or effect or if there is no relationship', it thus contains all the perceived relationships in the system (Northcutt & McCoy 2004:170). The IRD table indicates arrows that explain the cause of the relationship as explained under ART, i.e. (1→2) indicates, 1 is the cause of or influences 2 and 2 is the effect of 1 or is influenced by 1. Tables 4.5 and 4.6 illustrate the IRD of RG1. The tables show that each relationship is recorded twice as indicated by arrows pointing up (*Outs)* and left (*Ins)* (empty spaces signify absence of a relationship) and the difference between the two gives the value of *delta* (Δ) (Northcutt & McCoy 2004:172). The value of the delta is used as a marker to represent the position of an affinity when drawing a System Influence Diagram (SID). Positive delta signifies a relative driver of the system. Negative delta signifies relative effects or outcomes of the system (Northcutt & McCoy 2004:173). Table 4.5 is sorted in the descending order of delta, as illustrated in Table 4.6.

Table 4.5: Interrelationship Diagram: RG1

Affinity Names: RG1
1. Positive future goals
2. Challenges in life
3. School environment
4. Adolescence
5. School Rules

Tabular IRD*								
	1	**2**	**3**	**4**	**5**	**OUT**	**IN**	**Δ**
1		←	←	←	←	0	4	-4
2	↑		←	←		1	2	-1
3	↑	↑		↑	←	3	1	2
4	↑	↑	←		↑	3	1	2
5	↑		↑	←		2	1	1

*Count the number of up arrows (↑) or *Outs*
*Count the number of left arrows (←) or *Ins*
*Subtract the number of *Ins* from the *Outs* to determine the (Δ) *Deltas* Δ = Out - In

Table 4.6: IRD Sorted in descending order of Delta: RG1

Tabular IRD – Sorted in descending Order of Δ								
	1	**2**	**3**	**4**	**5**	**OUT**	**IN**	**Δ**
3	↑	↑		↑	←	3	1	2
4	↑	↑	←		↑	3	1	2
5	↑		↑	←		2	1	1
2	↑		←	←		1	2	-1
1		←	←	←	←	0	4	-4

According to Northcutt and McCoy (2004:173), drivers can be deduced from the IRD table, where the Primary Driver of the system has a high positive delta with many *Outs* and no *Ins,* indicating it affects many other affinities and is not affected by any affinity. The '*No Ins Rule'* states that any affinity with no *Ins* is a Primary Driver (Northcutt & McCoy 2004:173). The Secondary drive has both *Outs* and *Ins,* but with more *Outs* than *Ins* (Northcutt & McCoy 2004:173). The Affinity with equal *Outs* and *Ins* is called a 'Circulator/ Pivot', indicating the middle position in the system. The Primary Outcome is identified by high negative numbers from many *Ins* and no *Outs,* indicating a significant effect from many affinities, but it does not affect others, while the Secondary Outcome is identified by both *Ins* and *Outs* with more *Ins* than *Outs,* revealing a relative effect (Northcutt & McCoy 2004:173). The *'No Outs Rule'* states that 'any affinity with no *Outs* is always a Primary Outcome (Northcutt & McCoy

2004:173). An IRD that presents with no zero values in all *Outs* or *Ins* does not indicate that there are no drivers or outcomes, but it indicates that the affinity is a strong relative cause or effect that influences or is influenced by other affinities. Such affinities can be labelled primary (Northcutt & McCoy 2004:173-174). Figure 4.5 shows the Tentative SID Assignment for RG1, which is the summary of drivers and outcomes deduced from Table 4.6.

Tentative SID Assignment: RG1		
3	Primary Driver	School Environment
4	Primary Driver	Adolescence
5	Secondary Driver	School Rules
2	Secondary Outcome	Challenges in life
1	Primary Outcome	Positive future goals

Figure 4.5: Tentative SID Assignment, RG1

4.5.5 GENERATING THE SYSTEM INFLUENCE DIAGRAM (SID): RG1

The SID is created by arranging the affinities horizontally according to their types as they appear in the Tentative SID Assignment. The Tentative SID Assignment of RG1 is represented in Figure 4.5. If a particular type contains more than one affinity, they are placed vertically in descending order of delta (Northcutt & McCoy 2004:178). A SID is constructed by using the example of the ART, i.e. arrows are drawn to represent the relationship between the affinities as they appear on the IRD and the initial SID. The *Cluttered SID* (see Figure 4.6) represents all the links (Northcutt & McCoy 2004:178). Northcutt & McCoy (2004:179) maintain that it becomes difficult to draw relationship arrows when affinities are arranged horizontally or flat and to resolve the difficulty they suggest to spread the affinities to make a circle. I have therefore arranged the affinities in circular form to draw the SID and reverted to a horizontal or flat SID with the final uncluttered SID.

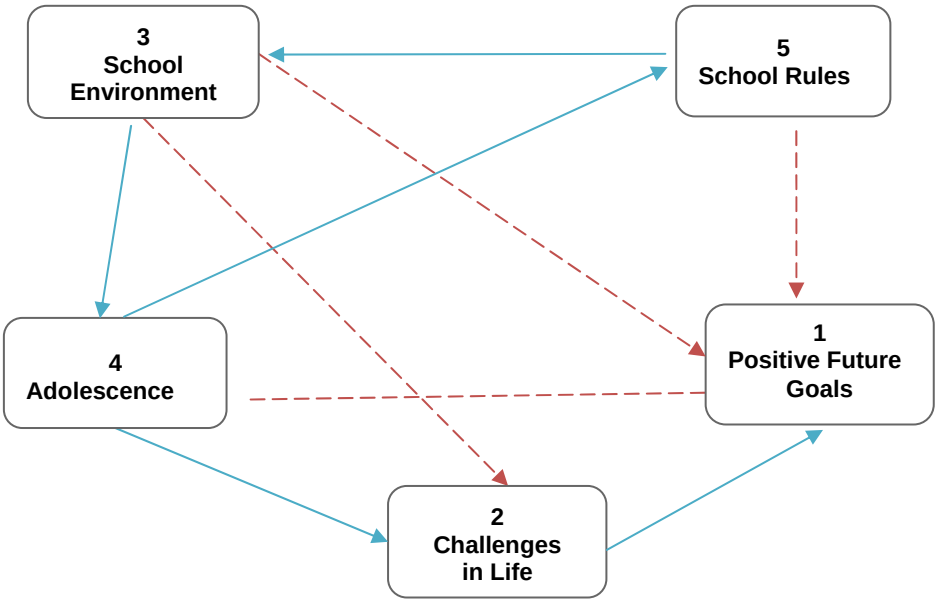

Figure 4.6: Cluttered System Influence Diagram, RG1

The Cluttered SID contains redundant links, both a direct and indirect route. The direct links are represented by dotted lines in Figure 4.6. When the direct link is removed, the indirect path from the driver to the outcome still exists. Removing the indirect links obviously causes loss of linkage information (Northcutt & McCoy 2004:178).The direct route 3-1 can be removed, there is a path 3-4-2-1; 3-2 can be removed, an intermediary path exists, 3-4-2; 4-1 can be removed, 4-2-1 is the intermediary path; and 5-1 can be removed with 5-3-4-2-1 remaining as the intermediary path. Figure 4.7 presents a clean SID, with all the redundant links removed. Northcutt and McCoy (2004:38) refer to the cluttered SID as 'high in complexity and low in simplicity' and the uncluttered SID as 'high in simplicity and low in complexity'. According to Northcutt and McCoy (2004:180), the clean SID aims to best communicate the effect-structure of the system 'as long as no links are broken' and a good general rule of thumb when arranging affinities is from left to right in the order of delta. Figure 4.5 was used additionally to guide me when arranging affinities from left to right in the descending order of delta, so that the clean SID would represent both influence and the driver/pivot/outcome status in the relationships among the affinities.

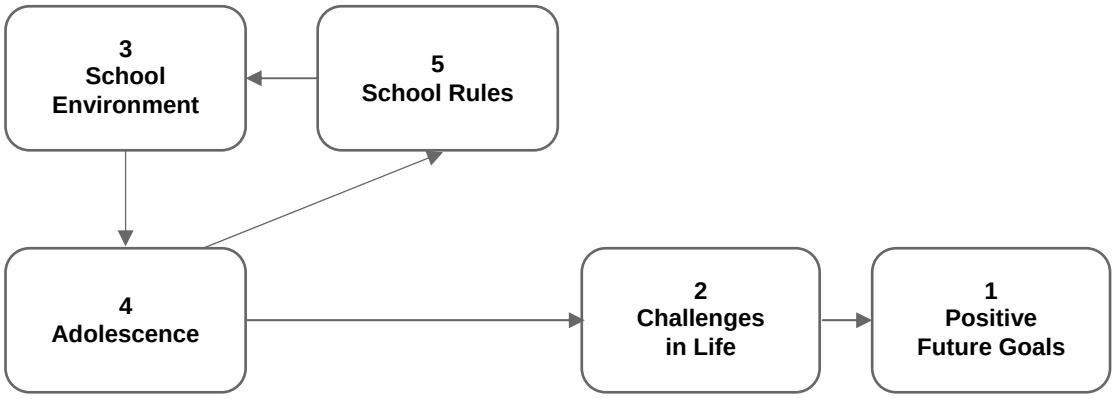

Figure 4.7: The Clean SID, RG1

In response to the questions, 'How does the school contribute to who you are?' and 'What is it that the school does that makes you who you are?' the resilient participants from School 1 perceived the affinities, *School Environment* and *Adolescence* as the Primary Drivers and *Positive Future Goals* as the Primary Outcome. Looking at the descriptions of affinities by RG1 in Figure 4.2, the resilient middle-adolescents of School 1 simply stated that their particular school environment influences or determines how teaching and learning take place to support their needs as adolescents. The school environment has a direct influence on the developmental phase of adolescence and is directly influenced by *School Rules.* The three affinities result in a feedback loop, starting at one affinity and leading back to the affinity (Northcutt & McCoy 2004:30-32). The adolescence stage determines which *Challenges in Life* they are presently facing, which in turn influences them to strive for their *Positive Future goals*.

In their perception, the school environment delivers on its mandate of teaching and learning in ways which are sensitive to and understand the demands and challenges of adolescence with the aim that one should positively achieve one's future goals. The resilient middle-adolescents of School 1 further point out the influential role of school rules to shape practices in the school environment, which indicates that even though the school environment is the primary driver, it is directly influenced by one affinity, the school rules.

The developmental phase of adolescence, even though it is a primary driver, also plays an intermediary role through which the school environment influences other affinities in the system, indicating that the school accommodates this phase differently than it would, for example, have accommodated preteens. The developmental phase of adolescence exposes the resilient learner to specific challenges in life and how the individual processes the challenges, will impact on his/her future goals. Successful resolution of challenges leads to positive future goals, which is what the resilient participants expect from life. Unsuccessful

resolution of challenges would lead to negative future goals, or to failure in attaining the goals.

It is not surprising to note that the developmental stage of adolescence influences what the participants experience as challenges in life, which can be associated with the 'stormy' and stressful nature of the stage (Louw & Louw 2007:282). The SID of RG1 indicates that adolescents' successful resolution or lack of success in resolving challenges will directly affect their future goals. The importance of success in managing and resolving life's challenges is highlighted by its direct influence on one's future. Positive future goals is the ultimate outcome in the view of the resilient middle-adolescents in School 1, it represents who they are and what the school contributes to who they are. The school provides an environment with rules and structure, a nurturing environment which guides and skills them towards managing and dealing with their developmental challenges and thus equips them to be successful individuals in the future. The recursive loop, shown in Figure 4.8, is discussed below.

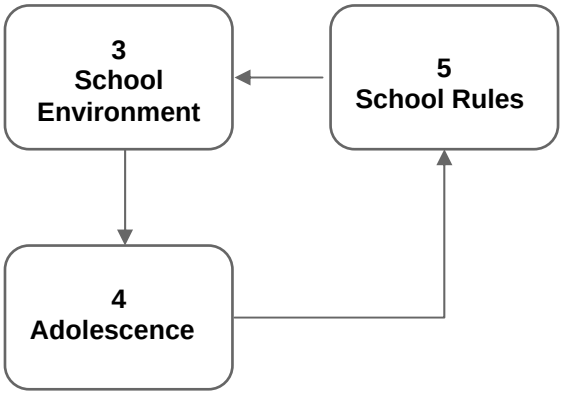

Figure 4.8: Rules, environment and developmental stage

Figure 4.8 illustrates a feedback relationship that exists among the three driver affinities of school environment, adolescence and school rules. The relationship states that the school environment is a nurturing and supportive environment for the middle-adolescent to learn and develop effectively. The school provides a structured learning environment with rules and principles which guide and direct the adolescent learners' behaviour in order for teaching and learning to take place effectively. One learner summed the importance of the school environment as follows: *'If there was no school there will not be order because we will all stay at home and do nothing'*. A school environment functioning well due to the consistent implementation of healthy, clear rules that give supremacy to order and structure, nurtures the development of the adolescent and provides for the satisfaction of the adolescent. The resilient adolescents in School 1 stated that for one to develop effectively and function productively in one's school environment one needs rules and structure to guide and protect

the learners. The resilient participants from School 1 recognised the importance of consistency and the security of knowing what is right and wrong, including moral development, in a school environment to support the unique needs and challenges of adolescence. The school environment is influenced by school rules and school rules constitute principles of governance and include policies, ethos, vision and missions of the school. The whole school approach is guided by the functional vision, mission and principles of governance. A school that caters for the needs of the learner should function within the functionalist model, where order takes precedence with clearly defined roles and expectations, which is well explained by Jansen's (2004:384) declaration that 'every component of the school, working with the others, enables the institution to function smoothly and predictably in achieving the mission and objectives of the school'.

In the following sections, the affinity analyses of RG2, LRG1 and LRG2 will be presented, their SIDs will be discussed and some comparative discussion will be attempted on the resilient and less-resilient focus groups of the two schools. To avoid repetition, the process detailed throughout this section in the presentation of the RG1 affinity analysis, will not be explained again.

4.6 AFFINITY ANALYSIS: RG2

The SID of RG2 was created by arranging its affinities according to the Tentative SID Assignment, see Tables 4.8 and 4.9. The Pareto Protocol for RG2, Table 4.7, shows that the cutoff reflected all the relationships up to 92.3%. There were no conflicting relationships.

Table 4.7: The Pareto Protocol RG2

Affinity Pair Relationship	Frequency Sorted (Descending)	Cumulative Frequency	Cumulative Percent (Relation)	Cumulative Percent (Frequency)	Power
1 > 4	4	4	5.0	15.4	10.4
4 < 5	4	8	10.0	30.8	20.8
1 < 2	3	11	15.0	42.3	27.3
1 < 5	3	14	20.0	53.8	33.8
2 > 4	3	17	25.0	65.4	40.4
2 < 5	3	20	30.0	76.9	46.9
1 > 3	2	22	35.0	84.6	49.6
3 > 4	2	24	40.0	92.3	52.3
2 > 3	1	25	45.0	96.2	51.2
3 < 5	1	26	50.0	100.0	50.0

Affinity Pair Relationship	Frequency Sorted (Descending)	Cumulative Frequency	Cumulative Percent (Relation)	Cumulative Percent (Frequency)	Power
1 > 2	0	26	55.0	100.0	45.0
1 < 3	0	26	60.0	100.0	40.0
1 < 4	0	26	65.0	100.0	35.0
1 > 5	0	26	70.0	100.0	30.0
2 < 3	0	26	75.0	100.0	25.0
2 < 4	0	26	80.0	100.0	20.0
2 > 5	0	26	85.0	100.0	15.0
3 < 4	0	26	90.0	100.0	10.0
3 > 5	0	26	95.0	100.0	5.0
4 > 5	0	26	100.0	100.0	0.0
Total Frequency	**26**	Equals Total Frequency	Equals 100%	Equals 100%	Power = E-D

Table 4.8: Interrelationship diagram: RG2

Affinity Names: RG2

1. Education
2. Reaching one's goals
3. School Curriculum
4. Ensuring Care and Safety
5. School Resources

Tabular IRD								
	1	**2**	**3**	**4**	**5**	**OUT**	**IN**	**Δ**
1		←	↑	↑	←	2	2	0
2	↑			↑	←	2	1	1
3	←			↑		1	1	0
4	←	←	←		←	0	4	-4
5	↑	↑		↑		3	0	3

Table 4.9: IRD sorted in descending order of delta with tentative SID Assignment: RG2

Tabular IRD – Sorted in descending Order of Δ								
	1	**2**	**3**	**4**	**5**	**OUT**	**IN**	**Δ**
5	↑	↑		↑		3	0	3
2	↑			↑	←	2	1	1
1		←	↑	↑	←	2	2	0
3	←			↑		1	1	0
4	←	←	←		←	0	4	-4

Tentative SID Assignment RG2		
5	Primary Driver	School resources
2	Secondary Driver	Reaching one's goals
1	Circulator / Pivot	Education
3	Circulator / Pivot	School curriculum
4	Primary Outcome	Ensuring care and safety

Figure 4.9 illustrates the cluttered SID produced by the resilient participants of School 2, in answer to the focus group issue statement question.

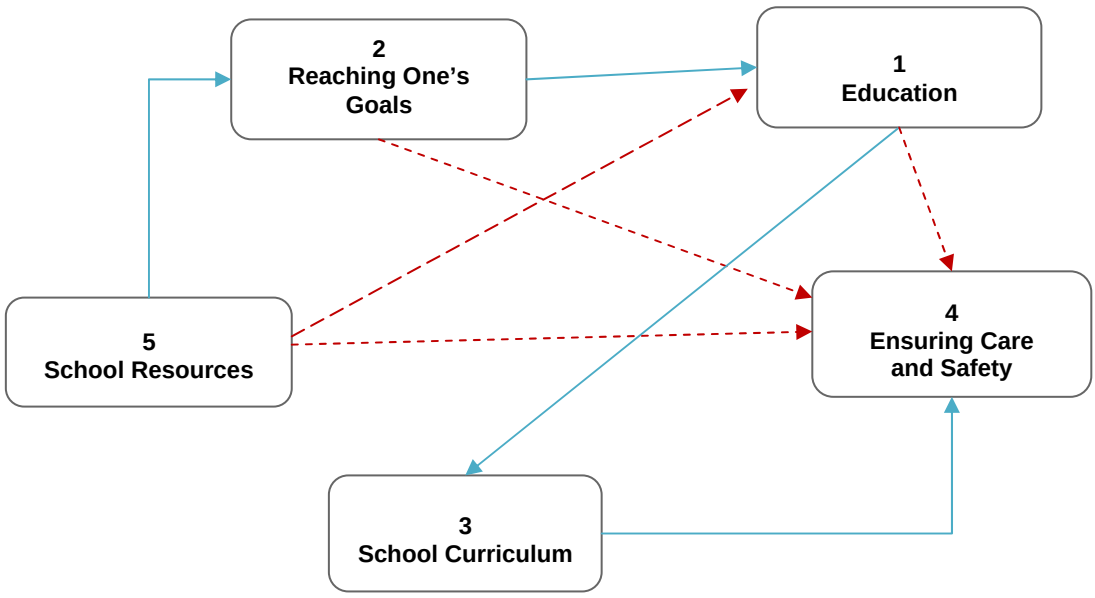

Figure 4.9: Cluttered System Influence Diagram, RG2

The dotted lines indicate redundant direct links that can be replaced by intermediary links that exist. The direct link 5-4 can be removed, an intermediary path exists 5-2-1-3-4; 5-1 can be removed, 5-2-1 is the intermediary path; 2-4 can be removed with 2-1-3-4 as the intermediary path; 1-4 can be removed, there is a path1-3-4. Figure 4.10 illustrates a clean

SID with all redundant links removed, indicating influence (→) as well as the equal status of the two pivots (presented as ovals).

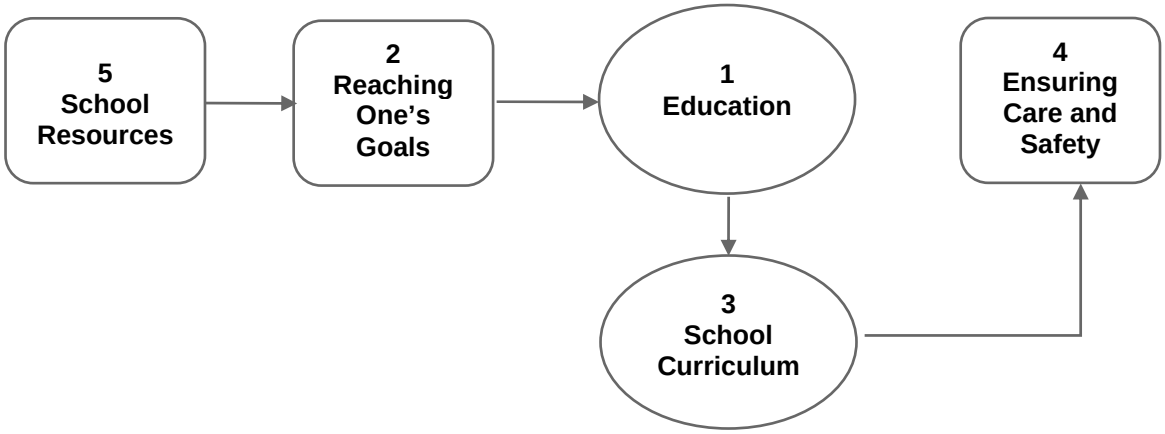

Figure 4.10: Uncluttered System Influence Diagram, RG2

In response to the questions, 'How does the school contribute to who you are?' and 'What is it that the school does that makes you who you are?', the resilient participants from School 2 perceived the affinity *School Resources* as the Primary Driver and *Ensuring Care and Safety* as the Primary Outcome. The SID gives a visual representation of what in the school environment contributes to 'who they are'. The SID looks complicated and the logic of the causal relationships among the affinities is not clear at a glance. However, I have proceeded to make sense of the representation of the resilient group from School 2, guided by their definition of the affinities in Figure 4.2.

The resilient middle-adolescents from School 2 stated that 'I am who I am primarily because of the resources my school provides me with, which lead to the particular goals that I reach (or do not reach) in enabling me to learn the subjects provided by the curriculum in my education. My school consequently contributes to the degree of care and safety I experience (or don't experience) in the rules and social principles I am taught.

In their perception, access to school resources directly influences the adolescent's ability to plan successfully and to reach their goals. The resilient middle-adolescents of School 2 explicitly perceived lack of access to school resources as detrimental to their goals. They positioned both *Education* and *School curriculum* as pivots or circulators in the SID. A circulator has an equal amount of *Ins* and *Outs,* positioning it in the middle (Northcutt & McCoy 2004:173) and it is therefore neither a driver nor an outcome. Ideally, a pivot is an important position in the SID because other affinities depend or revolve around it. In this way, it connotes the context or condition within which the drivers operate to effect the outcomes.

The SID of the resilient middle-adolescents from School 2 illustrates that in as much as education and school curriculum are influenced by school resources and the reaching of goals, they are 'affected' by the drivers and thus represent some 'effect' of school resources and the reaching of goals. According to Northcutt and McCoy (2004:29,197), the relationships between affinities are defined as cause and effect and one of the strengths of IQA is the ability to represent relationships in terms of cause and effect. In this study, I am cautious in using 'cause' and 'effect' when defining the influences and prefer to think multi-factorially in terms of 'contribution' or 'influence', i.e. an influencing affinity affects the other. The two pivots occupy a position that is capable of spinning and turning things around depending on the influence of the driver. Thus it can be assumed that access to school resources will enable the learners to benefit effectively from teaching and learning in the 'right' subjects that will enable them to gain more knowledge, and that influences the school's role of providing care and safety for its learners. However, lack of access to school resources also influences the quality of education and the curriculum of the school, thus affecting the school's role of ensuring care and safety for its learners negatively.

The SID indicates that the two affinities education and school curriculum occupy a similar position as pivots, but the learners perceived education to influence the school curriculum and not the other way around. 'Education' is defined as teaching and learning and getting more knowledge, an opportunity to be someone in life, while 'school curriculum' is defined as subjects taught at school, which are part of teaching and learning. It is not surprising that the learners perceived that the education the school provides has an influence on the 'quality' of the subjects offered. The two pivots are the 'effects' of the drivers and influence the outcome, i.e. access to good educational resources influences the quality of education and subjects provided and ultimately influences the school's role of ensuring care and safety. Simply, the middle-adolescent learners in School 2 were saying, 'a school that makes educational resources available to its learners thus supporting the reaching of goals, is able to provide good education and present the curricular subjects adequately, thereby providing a safe and caring learning environment'.

According to the resilient adolescents of School 2, lack of access to available school resources frustrated their educational goals. Their experiences can best be explained by the following statement: *We have computers at school but we are not allowed to use them, only teachers and Grade 11-12 are allowed to use computers, it is frustrating because we want to learn so much about the things that we do not understand and new things but here at school we are denied the chance to do that'*. The outcome perceived by the learners was that of a school that ultimately failed to provide them with care and safety.

In conclusion, the primary outcome of the SID, ensuring care and safety, is influenced by all the affinities while it influences none. The RG2 stated that the role of the school is to ensure care and safety for its learners, i.e. enforcing discipline, the school rules and maintaining order are driven by school resources (primary driver), which influences the way and degree in which goals are achieved, the quality of education and the presentation of the school curriculum. The affinity in the primary outcome position represents the result of the relationships of all the affinities in the SID, its position reports on what happens in the system. In answer to the question 'What is it that the school does (or fails to do) that makes (or affects) who you are?' the RG2 with their SID said, 'The school can ensure that they provide us with care and safety' or, based on the negative statements in their definition of affinities (Figure 4.2), 'The school does not ensure that we are provided with care and safety'.

4.7 REFLECTION ON THE RG1 AND RG2 SIDs

The RGI and RG2 participants from the two schools identified future goals as one of the affinities that contributed to who they are, but its influence operated in different ways.

The RG1 participants saw achieving positive future goals as the outcome of what the school does to make them who they are. The group's perception of self, 'who they are', and what the school does to make them who they are, was motivated by the rewards they foresaw, their focus on their future, with the school environment and their life phase of adolescence as the primary drivers. In their view, the structured environment that directs and models required behaviour essential for one's development equipped them with essential skills to manage challenges they encountered and thus prepare them for their positive future. The participants clearly stated that the school supports who they are, by enforcing rules and thus ensuring that their environment is able to provide them with the required teaching and learning and necessary skills to handle their developmental challenges and to have successful careers. The focus was on their positive future.

The RG2 participants saw reaching goals as the secondary driver in how the school contributes to who they are. The position of influence occupied by the affinity, reaching one's goals, is important because of its 'effect' on the other affinities on the SID, i.e. the two pivots and the primary outcome. The affinity is influenced by the primary driver, school resources. It can be assumed therefore, that when School 2 denies its learners access to essential resources it limits their opportunity to reach their goals. Mentioning goal attainment so early in the SID, and as a driver, signals a different scale of goals targeted, i.e. school-based rather than future-based. It is important to note that the RG2 defined school resources as available school resources **for one to use.** The definition in my understanding emphasises

access. To RG2 participants, access to school resources was essential for providing the necessary tools to enable them to reach their goals, 'like success', or effective execution of tasks.

The two groups viewed the supportive role of the school as essential, but approached it using different drivers and outcomes. The RG1 viewed structure, enforcing discipline and guidance to be the driver of how the school contributes to who they are. Management and leadership are essential for them to maintain who they are, and for them the goal or outcome of what the school can do for them, is to ensure they achieve positive future goals. The group thinks adolescents could struggle or even fail in an environment where the rules are lax and fail to accommodate their developmental state. The RG2 viewed school resources as a driver to how the school can contribute to who they are and ensuring care and safety as the outcome, thereby emphasising a more utilitarian perspective. To them a school which denies them access to resources will negatively affect their education. A good education to them is defined in terms of access to available resources, which enables them to gain knowledge and learn better in the subjects they enjoy.

The two groups show the dynamic role of context in influencing perceptions and behaviour and the focus of the resilient participants. The results thus suggest that the two schools, because of their uniqueness had a different influence and effect on their learners. The negative formulation of affinities appears strong from RG2 compared to RG1 (Figure 4.2), especially bearing in mind that they both represent the resilient groups. In comparison to the RG1 participants, the resilience scores of RG2 participants are lower (Table 4.1) and this might be related to their more demanding attitude in respect of their school environment or it might indicate an awareness of what the school is not able to provide for them to function effectively. Another explanation could be the interactions among the role players as a school or teacher influence, i.e. an environmental or systemic effect. However, it cannot be denied that the two groups clearly focused on different drivers and outcomes in answer to the research question.

4.8 AFFINITY ANALYSIS: LRG1

The Pareto Cumulative Frequency Chart presented in Table 4.10 gives a representation of the affinity relationship table with the frequency of the agreement of the focus group members. The affinities are sorted in the descending order of frequency. The Pareto Protocol for LRG1, Table 4.10, shows that the cutoff reflected all the relationships up to 89.7%.

Table 4.10: The Pareto Protocol: LRG1

Affinity Pair Relationship	Frequency Sorted (Descending)	Cumulative Frequency	Cumulative Percent (Relation)	Cumulative Percent (Frequency)	Power
1 < 3	4	4	5.0	13.8	8.8
1 > 5	4	8	10.0	27.6	17.6
2 < 3	4	12	15.0	41.4	26.4
2 > 5	4	16	20.0	55.2	35.2
3 > 5	4	20	25.0	69.0	44.0
1 > 4	3	23	30.0	79.3	49.3
4 > 5	3	26	35.0	89.7	54.7
2 < 4	2	28	40.0	96.6	56.6
1 < 4	1	29	45.0	100.0	55.0
1 > 2	0	29	50.0	100.0	50.0
1 < 2	0	29	55.0	100.0	45.0
1 > 3	0	29	60.0	100.0	40.0
1 < 5	0	29	65.0	100.0	35.0
2 > 3	0	29	70.0	100.0	30.0
2 > 4	0	29	75.0	100.0	25.0
2 < 5	0	29	80.0	100.0	20.0
3 > 4	0	29	85.0	100.0	15.0
3 < 4	0	29	90.0	100.0	10.0
3 < 5	0	29	95.0	100.0	5.0
4 < 5	0	29	100.0	100.0	0.0
Total Frequency	**29**	Equals Total Frequency	Equals 100%	Equals 100%	Power = E-D

Using the Pareto Cumulative Frequency Chart, a summary of all the relationships is represented through the IRD to determine the system's drivers and outcomes. The IRD for the LRG1 is illustrated in Table 4.11 and Table 4.12.

Table 4.11: Interrelationship diagram: LRG1

Affinity Names: LRG1

1. Being Friendly
2. Bullying
3. Socialisation
4. Challenges
5. Future Goals

Tabular IRD LRG1								
	1	**2**	**3**	**4**	**5**	**OUT**	**IN**	**Δ**
1			←	↑	↑	2	1	1
2			←		↑	1	1	0
3	↑	↑			↑	3	0	3
4	←				↑	1	1	0
5	←	←	←	←		0	4	-4

Count the number of up arrows (↑) or *Outs*
Count the number of left arrows (←) or *Ins*
Subtract the number of *Ins* from the *Outs* to determine the (Δ) *Deltas* Δ = Out - In

Table 4.12: IRD sorted in descending Order of delta with tentative SID Assignment: LRG1

Tabular IRD – Sorted in descending Order of Δ								
	1	**2**	**3**	**4**	**5**	**OUT**	**IN**	**Δ**
3	↑	↑			↑	3	0	3
1			←	↑	↑	2	1	1
2			←		↑	1	1	0
4	←				↑	1	1	0
5	←	←	←	←		0	4	-4

Tentative SID Assignments		
3	Primary Driver	Socialisation
1	Secondary Driver	Being friendly
2	Circulator/ Pivot	Bullying
4	Circulator / Pivot	Challenges
5	Primary Outcome	Future goals

The SID provides a visual picture of the relationships among the affinities and represents the mindmap of the perceptions of the participants in LRG1 in response to the questions, 'How does the school contribute to who you are?' and 'What is it that the school does that affects

who you are?' Figure 4.11 represents a cluttered SID of LRG1. The dotted lines illustrate redundant links which were removed to present a clean SID in Figure 4.12.

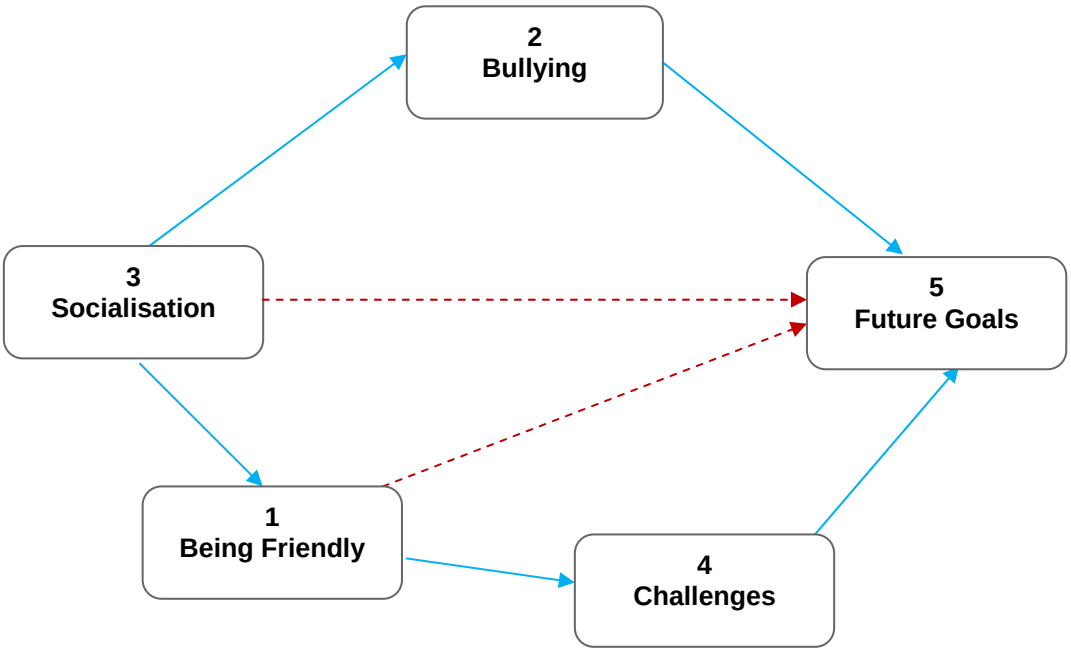

Figure 4.11: The Cluttered SID, LRG1

The direct route 3-5 can be removed, there is a path 3-2-5 or 3-1-4-5; and 1-5 can be removed, an intermediary path exists 1-4-5. Figure 4.12 represents the clean SID with all the redundant links removed.

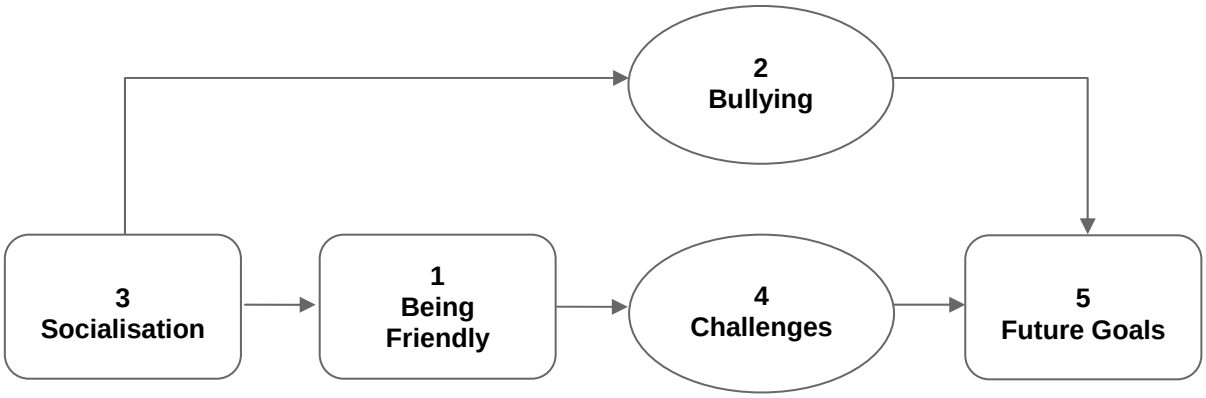

Figure 4.12: The Clean SID, LRG1

In answer to the questions 'How does the school contribute to who you are?' and 'What is it that the school does that makes you who you are?' the less-resilient participants from School 1 perceived the affinity, *Socialisation* as the primary driver and *Future goals* as the primary outcome. Looking at the description of the affinities by LRG1 in Figure 4.2, the less-resilient middle-adolescents of School 1 simply stated that socialisation influences who they are, i.e. a bully or a friendly person. The group defined socialisation as 'how one was raised, one's values and culture', whereby family then plays a significant role in this affinity. It cannot be

ignored that the school, just like the home, then is a socialisation agent and contributes to the socialisation of the learner (Louw & Louw 2007:8, 138-139, Parson, Bales, Olds, Zelditch & Slater 1956:17-18, 38, 125), but the less-resilient participants of School 1 emphasised the role of parents above that of the school in the socialisation of the child. They argued that by the time a learner starts school, he/she has developed morally to differentiate between right and wrong behaviour and to respect others. The less-resilient learners of School 1 accepted that not all children are socialised the same. Thus, depending on how one was socialised, the behaviour demonstrated at school indicates that some learners are friendly and others are bullies. The affinity bullying is constructed as a verb but the definition (Figure 4.2) was given as a noun and I will thus discuss it as a noun.

The affinity *Being friendly* is positioned as a secondary driver while *Bullying* and *Challenges* are pivots, connoting conditions within which the drivers operate to effect the outcome. The LRG1 simply indicated that 'bad' socialisation influences one to be a bully, and because of its negative construction and pivot position, the influence of the negative frame of perspective and behaviour on the future goals of the learner might not be desirable. LRG1 in Figure 4.2 defined bullying as a bad person, 'not a good or a friendly person, but a naughty and delinquent person'. By contrast, being friendly, as a driver, influences or even determines how the individual engages with challenging circumstances and emerges from these to attain the goals set for the future.

According to Figure 4.2, the less-resilient learners of School 1 perceived that being friendly includes 'having the right attitude and respect for others'. Challenges are defined as problems one experiences in one's environment, e.g. poverty, lack of parental support and difficulty in identifying and utilising teacher support. According to Figure 4.2, the LSG1 perceived that, in dealing with some of the challenges, the friendly individual can for instance decide to share lunch with other deprived learners, portraying an altruistic attitude, or approach a teacher for assistance, portraying a trustful attitude. The SID indicates future goals as the primary outcome. Future goals are defined as what learners want to be when they grow up, it is about reaching goals and doing the job one wants. Being friendly influences how they deal with the challenges. The challenges, according to the group, are accepted as part of growing up. The school only features in being the context containing the challenges. Challenging conditions then influence the attainment of future goals, by sharpening and 'challenging' them to seek solutions to problems. Challenges are positively constructed (they include active participation in finding solutions to problems) and recognised and in this way influence how the desired future goals are attained. The group indicated that dealing with challenges constructively helps in growth and development and since a bully does not engage positively with challenges, he/she loses on the experiences which the

friendly learner gains when exposed to challenges. The attainment of future goals by the two individuals will thus be different in the degree of attainment and perhaps even in terms of range.

According to Figure 4.2, the less-resilient participants of School 1 thought that, once future goals are achieved, the family shares in the joy of reaching one's dreams and allowing significant others to benefit from one's success and making them happy and proud. It thus makes sense that the less-resilient participants of School 1 indicated socialisation primarily in the home as the strongest driver in how the school contributes to who they are, and future goals as the ultimate outcome of family influence and personal endeavour. The socialisation agents share in the joy and outcome of what the learners perceived the school could only provide a context for, for them to achieve, their future goals. According to the group, as described in Figure 4.2, future goals are connected with education and learning (the school provides the opportunity), but the personality (being friendly) required for one to achieve future goals is not easy, it leads one through personal challenges.

4.9 AFFINITY ANALYSIS: LRG2

4.9.1 ORIENTATION

The Pareto Cumulative Frequency Chart presented in Table 4.13 gives a representation of the affinity relationship table with the frequency arrangement of the focus group members and shows that the cutoff reflected all the relationships up to 95.7%. Table 4.15 indicates the conflicting relationships the LRG2 produced, 1→2 and 2→1, (discussed in 4.5.3).

Table 4.13: The Pareto Protocol: LRG2

Affinity Pair Relationship	Frequency Sorted (Descending)	Cumulative Frequency	Cumulative Percent (Relation)	Cumulative Percent (Frequency)	Power
1 > 3	4	4	5.0	17.4	12.4
1 < 5	4	8	10.0	34.8	24.8
2 > 3	4	12	15.0	52.2	37.2
3 < 4	4	16	20.0	69.6	49.6
1 > 2	2	18	25.0	78.3	53.3
1 < 2	2	20	30.0	87.0	57.0
3 < 5	2	22	35.0	95.7	60.7
1 < 4	1	23	40.0	100.0	60.0
1 < 3	0	23	45.0	100.0	55.0
1 > 4	0	23	50.0	100.0	50.0

Affinity Pair Relationship	Frequency Sorted (Descending)	Cumulative Frequency	Cumulative Percent (Relation)	Cumulative Percent (Frequency)	Power
1 > 5	0	23	55.0	100.0	45.0
2 < 3	0	23	60.0	100.0	40.0
2 > 4	0	23	65.0	100.0	35.0
2 < 4	0	23	70.0	100.0	30.0
2 > 5	0	23	75.0	100.0	25.0
2 < 5	0	23	80.0	100.0	20.0
3 > 4	0	23	85.0	100.0	15.0
3 > 5	0	23	90.0	100.0	10.0
4 > 5	0	23	95.0	100.0	5.0
4 < 5	0	23	100.0	100.0	0.0
Total Frequency	**23**	Equal Total Frequency	Equals 100%	Equals 100%	Power = E-D

Table 4.14: Conflicting relationships, LRG2

Affinity Pair Relationship	Frequency Sorted (Descending)	Conflict?
1 > 2	2	?
1 < 2	2	?
3 < 5	2	
1 > 3	4	
1 < 5	4	
2 > 3	4	
3 < 4	4	

According to Northcutt and McCoy (2004:163), the conflicting relationship with the highest frequency is included in the IRD, while the remaining one is later reconciled when constructing the SID. In this case, both had the same frequency (2). As a result, the first relationship in order of appearance was used and the remaining one will be reconciled later, when constructing a clean SID. Table 4.15 and 4.16 present the IRD of the LRG2.

Table 4.15: Interrelationship diagram: LRG2

Affinity Names: LRG2

1. Self-development
2. Self-identity
3. Reaching Goals
4. School Curriculum
5. School Resources

Tabular IRD LRG2								
	1	**2**	**3**	**4**	**5**	**OUT**	**IN**	**Δ**
1		↑	↑		←	2	1	1
2	←		↑			1	1	0
3	←	←		←	←	0	4	-4
4			↑			1	0	1
5	↑		↑			2	0	2

Count the number of up arrows (↑) or *Outs*
Count the number of left arrows (←) or *Ins*
Subtract the number of *Ins* from the *Outs* to determine the (Δ) *Deltas* Δ = Out- In

Table 4.16: IRD sorted in descending order of delta with tentative SID Assignment: LRG2

Tabular IRD – Sorted in descending Order of Δ								
	1	**2**	**3**	**4**	**5**	**OUT**	**IN**	**Δ**
5	↑		↑			2	0	2
4			↑			1	0	1
1		↑	↑		←	2	1	1
2	←		↑			1	1	0
3	←	←		←	←	0	4	-4

Tentative SID Assignments		
5	Primary Driver	School resources
4	Primary Driver	School curriculum
1	Secondary Driver	Self-development
2	Circulator/ Pivot	Self-identity
3	Primary Outcome	Reaching goals

4.9.2 GENERATING THE SYSTEM INFLUENCE DIAGRAM (SID) LRG2

The cluttered SID, Figure 4.13 generated by the LRG2 illustrates all the relationships between affinities as they appear in Table 4.16.

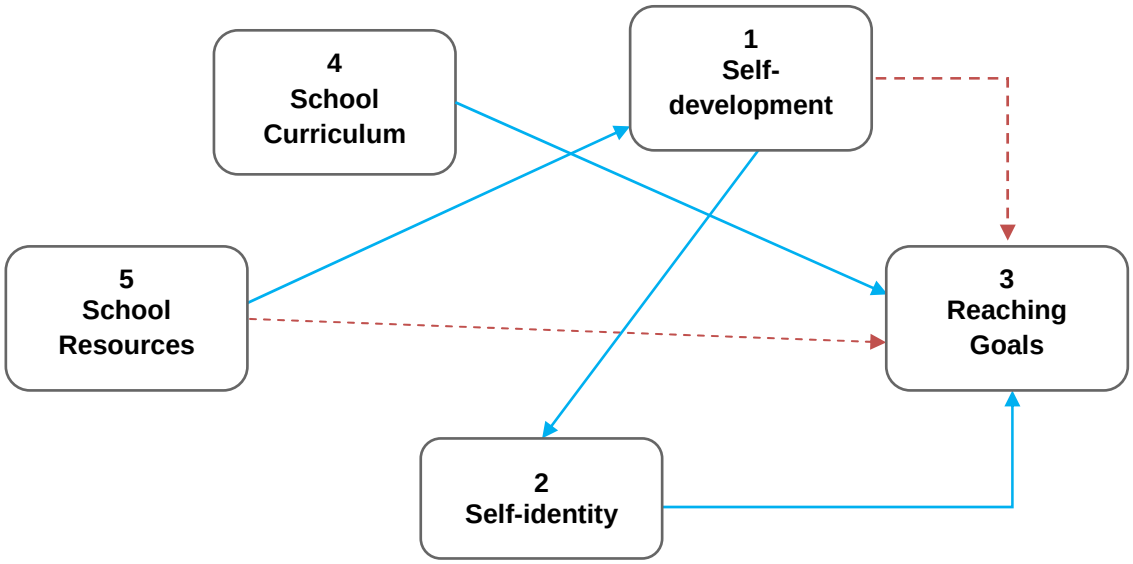

Figure 4.13: Cluttered SID, LRG2

The clutter in Figure 4.13 was cleaned by removing the direct route 5-3, an intermediary path exists 5-1-2-3 and 1-3 could be removed, an intermediary path exists 1-2-3. The conflicting links indicated in Table 4.14, 1→2 and 1←2, were reconciled to the clean SID, Figure 4.14. The reconciled link does not cause clutter to the SID, since there is no intermediary path from 2-1, the link was retained. The conflicting link indicates that the two affinities were perceived as both an influence and an effect of the relationship resulting in a feedback loop.

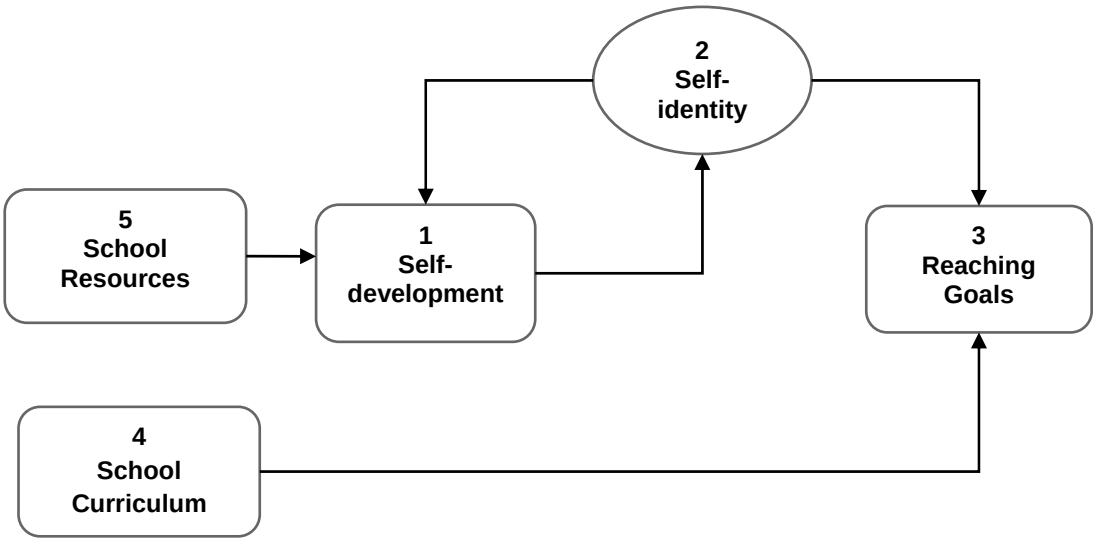

Figure 4.14: Clean SID, LRG2

Figure 4.14 provides a visual representation of what the LRG2 perceived as an answer to the questions, 'How does the school contribute to who you are?' and 'What is it that the school does that makes you who you are?'

The less-resilient middle-adolescents from School 2 perceived *School Resources* and *School Curriculum* as the primary drivers and *Reaching goals* as the primary outcome. School resources which are defined as access to school facilities, according to Figure 4.2, influences self-development which relates to what one can achieve at school, positive development, being a better person and having respect for others. Self-development influences the development of identity, which the group related to growth and development into the kind of person one wants to be, including self-discovery and self-knowledge. Ultimately, less-resilient School 2 learners perceived that self-identity influences the reaching of goals, which is defined as reaching what one wants to be and knowing the rewards of realising one's goals.

The SID indicates another primary driver, the school curriculum. School curriculum has only one relationship, it influences the primary outcome, future goals. This is an unusual occurrence in the SID. School curriculum is in Figure 4.2 defined as subjects offered at school. The importance of offering the right subjects is highlighted by how the school curriculum leads straight to influencing how one reaches goals. What the SID indicates, is that reaching goals is directly influenced by the school curriculum and indirectly influenced by access and availability to school resources. The two primary drivers were defined by the LRG2 to represent nearly similar things. School resources concentrated on lack of access to available school resources e.g. library and computer laboratory, while school curriculum referred to subjects the school does not offer but that were viewed essential for their future. The SID thus portrays that subjects the school is not providing (the affinity is constructed negatively) affect the less-resilient learners in reaching their goals. This makes sense of LRG2's frustration at the school's failure to provide them with the 'right' curriculum, e.g. *The school does not offer all the subjects that we want, not having subjects you want (singing, computer lessons) is frustrating'. 'It sometimes makes going to school useless because you do not learn all the things you want to learn'*. '*What is the use of going to school all your life and still not have the choice to learn what you want'*? What the participants were saying is that there are two ways towards the outcome, i.e. what the school can do to make them who they are, firstly, to make school resources available and secondly to provide them with the 'right' curriculum.

The LRG2 further highlights the close relationship between the two affinities, self-development and self-identity, causing a feedback loop. The feedback loop is illustrated in Figure 4.15, representing a start at one affinity that leads back to the affinity.

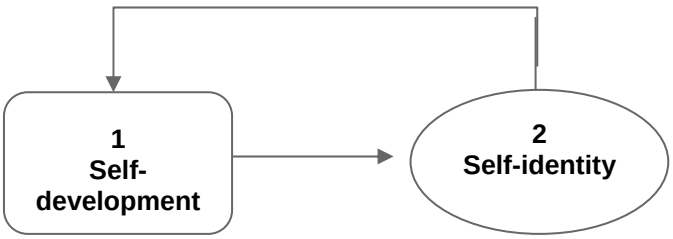

Figure 4.15: Knowing Who I Am

The two affinities are perceived as the influence and effect of each other, i.e. self-development influences self-identity and vice versa. The two affinities however, have a different effect-status in the SID. Self-development is the secondary driver and self-identity is a pivot, representing the context within which the drivers effect the outcome.

It can be assumed that healthy development could lead to a positive self-identity, which is a healthy sense of self which influences reaching goals and again, an unhealthy sense of self could deny an individual the prospect of reaching planned goals. To reach goals, which is the outcome of the relationship one has with the school, is influenced by access to school resources and the school curriculum. Self-development, growth, development and a 'better me' influence and are affected by self-identity, self-discovery, 'getting to know more about me'. The middle-adolescents stated that self-development, growth, becoming a better person and acknowledging the important role others play in one's life leads to a clear perception of self, it makes one aware of 'who you are'. It is not surprising that the two affinities created a feedback loop, they both represent a better perception of self, that growth and development lead to a healthy state of self, a clear definition of who you are. However, in life unhealthy development, the lack of growth, improvement and progress lead to role confusion, and poor future prospects, as it is clearly indicated in Erikson's adolescence developmental stage of identity vs. identity confusion (Erikson 1980:94, Louw & Louw 2007:309). The learners perceived that positive development and knowledge of self, 'who you are', are essential for one to reach one's goals. However, learners who show poor self-development are much prone to having poor self-identity and their prospect of reaching desired goals could be questioned.

4.10 REFLECTION ON THE LRG1 AND LRG2 SIDs

LRG1 and LRG2 both perceived goals as their primary outcomes (future goals and reaching goals), but outlined how the goals could be achieved quite differently. According to Figure 4.2, to LRG1 and LRG2 future goals and reaching goals have similar intentions in doing the job one wants and enjoying the rewards of one's success.

The pathways represented by the LRG1 and LRG2 middle-adolescent learners' SIDs connote both positive and negative ways contributing to and influencing the outcome. For LRG1, the two intermediary paths from the primary driver socialisation to the primary outcome future goals, run via affinities that define personality (being friendly and being a bully). For LRG2, the primary driver school resources influences the primary outcome reaching goals via growth and development and better understanding of self. It is noteworthy that the less-resilient participants in both schools were more aware of person skills and attributes than their resilient counterparts, implying some awareness of their need for further growth.

4.11 REFLECTION ON THE SIDs PER SCHOOL

The SIDs generated by School 1 middle-adolescents positioned the affinities *Challenges in life* (a secondary outcome) and *Challenges* (a pivot) to directly influence the primary outcomes, *Positive future goals* and *Future goals*. According to the RG1 SID, the developmental phase of adolescence exposes learners to specific challenges in life, and how the individual processes the challenges will then impact on his/her future goals. The LRG1 SID connotes that the personality of an individual, being friendly, influences how one will engage with the challenges in life, which strengthens one, and thus influences the attainment of one's future goals. The middle-adolescents from School 1 affirmed the influence of challenges on their future goals and the importance of resolving challenges positively to ensure positive future goals. It can be concluded that the direct influence of the affinity of challenges on the future goals of the adolescent, according to these SIDs, affirms the importance of providing life skills to middle-adolescents in School 1 to assist them in dealing with the challenges they perceived in their school environment and within themselves.

What differed in the SIDs of School 1 was the relevance accorded to the influence of the school. RG1 acknowledged *School environment* and *School rules* as primary and secondary drivers respectively, thereby elevating them to the ultimate causal sphere, whereas LRG1 relegated the contribution of the school to merely forming the context within which challenging experiences are dealt with. The less-resilient participants of School 1 expressly

stated that their development of socialisation skills within their homes was decisive in who they become.

The SIDs presented by School 2 middle-adolescents contain three similar affinities, *School resources*, *Reaching goals* / *Reaching one's goals* and *School curriculum* but with different positions of influence. RG2 and LRG2 SIDs both positioned the affinity *School resources* as the primary driver. In both SIDs, the school curriculum occupied an important position of direct influence on the primary outcomes. Their emphasis on resources and curriculum suggest a utilitarian view which might actually have been formed by perceived inadequacies. The two groups were concerned and frustrated about what they perceived as the school's inability to provide access to existing school resources, e.g. library and computer laboratory, and a relevant curriculum. RG2 viewed the availability or not of school resources as a direct influence on reaching one's goals or not, and LRG2 thought that the availability of school resources actually influenced their very development, and indirectly also their sense of identity. RG2 perceived that the school curriculum, which is positioned as a pivot, influences the school's role of providing them with care and safety (also a somewhat utilitarian outcome), while LRG2 positioned the school curriculum as a primary driver which influenced their prospects of reaching goals. It can be concluded that School 2 middle-adolescents perceived that by making resources available and presenting a good school curriculum the school would be able to provide them with their stated outcome in answer to the question 'What is it that the school does that makes you who you are?'

The similarity among the focus group SIDs is the importance accorded to the affinity goals, because it features in the SIDs of all the focus groups. It can be concluded that middle-adolescent learners in this study were all 'concerned' about their future goals, but they looked upon their schools differently as helping them to reach and realise their future goals. LRG1's acknowledgement of the school was scanty, implying that they did not see the school as purposefully and constructively contributing to their goal attainment, playing no more than a contextual role. LRG2 appeared to view the school as a provider, including some criticism concerning both resources and subjects on offer.

The difference between School 1 and School 2 SIDs appears to be the school context. The RG1 acknowledged the school's contribution in influencing their positive future goals, and the LRG1 even though they did not acknowledge the school more, they 'blamed' the family system for 'bad' socialisation, and the school was presented as a context where the interactions influenced by socialisation (good or bad) took place. In the challenges they experienced, the LRG1 acknowledged teacher assistance in problem solving, portraying a trustful attitude. Thus, School 1 appeared to have a positive contribution to its learners.

School 2 on the other hand received less (RG2) and no (LRG2) acknowledgement from its learners. Poor school resources and school curriculum were perceived as influences to the school's failure and inability to positively contribute to its learners' sense of self (who they are) and to influence their outcomes negatively.

Enthoven (2007) conducted a related study, sponsored by the SANPAD project in the Netherlands and her research question was, more broadly, '*How does the school environment contribute to the resilience of middle-adolescent students?'* According to Enthoven (2007:111), the resilient and 'not-resilient' middle-adolescents from a low socio-economic background in her study indicated above all that they required safety and good education from their schools. But the adolescents' perception of the school's role in providing safety and good education differed, based on their resilience status. The resilient adolescents provided examples of their experiences of safety and good education provided by the school, whereas the 'not resilient' adolescents from the same school environment provided negative examples, i.e. of their experiences of 'less' safety and good education (Enthoven 2007:123-136). The 'not-resilient' expected more and experienced less from the school, while the resilient middle-adolescents were able to recognise and utilise the safety and good education the school provided. Thus, the resilient middle-adolescents were positive about the school's contribution to their resilience and actively accessed its assets, while the 'not-resilient' students were negative.

In this study, all participants, according to their SIDs, perceived future goals to be important in their relationship with the school and, according to Figure 4.2, future goals encompass their dreams, thus they have expectations and plans about their lives. Furthermore, even though all the groups did not include the affinity education in their SIDs, the importance of teaching and learning was mentioned by all groups in their affinities especially in ensuring their future goals, as explained in Figure 4.2. The resilient learners were reflective, they acknowledged the important role the school played in their lives and criticised what they perceived as unfulfilled roles, e.g. girls from RG1 referred to the inconsistent enforcement of some school rules and RG2 complained about denial of access to available school resources. The less-resilient learners from School 1 in defining their affinities were less acknowledging of the school, which was to them a context of development and experiences. The home was according to them influential in contributing to who they will become through socialisation. According to LRG1, the school provided a context of experience and growth, a place where various personalities (being friendly and bullying) met, which exposed them to life's challenges and growth. The less-resilient learners from School 2 were also less acknowledging of the school which, they perceived, had failed to provide them with the necessary school resources and good subjects influencing negatively their ability to reach

their goals. The learners further perceived lack of school resources influence their self-development and self-identity negatively, thus like LRG1, the expectation of growth and development into a better self is highly accentuated by the learners.

In this study, the less-resilient learners can be assumed to aspire for the opportunity to grow and 'change' into the best they could be, they recognise deficiencies and barriers around them and within them and since they aimed for a better future, they criticised the school for failing to help them be what they wanted to be. RG1 were positive in their affinities and they acknowledged the school for not only delivering on its mandate of teaching and learning but also for being sensitive to their developmental phase of adolescence, thus they saw their outcome as not just reaching goals but positive future goals. RG2 challenged the school, they were critical of the school, and because they viewed school resources (primary driver) to be scanty, they doubted the education and the school curriculum provided by the school, as a result, the school failed to provide them with their outcome, care and safety.

The two studies conducted in the Netherlands and South Africa obviously had contextual differences. In the Dutch study, the 'not resilient' students struggled with accessing available resources, which the resilient students benefited from, whereas in this study, the resilient learners challenged the school to remain consistent and deliver on its role. The less-resilient learners concentrated on external control, they required 'change and growth' which they lacked in their environment. Like the Dutch 'not-resilient' students, they identified more risks and barriers which denied them the opportunity to view their environment in a more positive perspective.

4.12 IQA INDIVIDUAL INTERVIEWS

According to Northcutt and McCoy (2004:197), the primary purpose of IQA is to represent the meaning of a phenomenon in terms of elements (affinities) and the relationships among them. The authors further state that the content of IQA interviews is determined by affinities developed during focus groups. IQA interviews require the researcher to share the focus group's definitions of affinities by asking interviewees open ended questions such as 'what does the affinity mean to you? Tell me about your experience with the affinity' to encourage the participant to reflect on meanings and experiences relevant to the affinities (Northcutt & McCoy 2004:197, 201).

Affinities produced during IQA focus groups, according to Northcutt and McCoy (2004:200), are used to create an interview protocol. The purpose of the interview protocol is to

> *... use the affinities identified through focus group data collection and analysis to inform and shape questions for the second round of data gathering: the interview',*

thus '*the focus group serves as a pilot study to guide further research by providing a tentative snapshot of the group mindmap.*

As a result, IQA focus groups are essential for gathering data which are further analysed and interpreted during individual interviews when participants can elaborate on the generated SID.

I structured the research to conduct IQA interviews after the focus groups. I identified two participants per focus group, based on their level of participation (as eloquent and highly active learners). I conducted the interviews guided by generated affinities and the constructed Affinity Relationship Tables, before the Pareto analysis and the creation of Interrelationship Diagrams and the relevant SIDs, and this, according to IQA process, is too early in the process. According to Northcutt and McCoy (2004:167) a quick SID is required to conduct interviews to gain a full picture and final picture of the perceived relationships between the generated affinities. Northcutt and McCoy (2004:167) indicate that without the benefit of a focus group SID, interviews are conducted before the structural flow is recognised. As a result, the process I followed cannot be credited as IQA interviews. The conducted interviews indeed produced similar IRTs as the focus groups.

Northcutt and McCoy (2004:167-168) state that IQA follow-up interviews are encouraged, but they acknowledge that useful studies can also be conducted without interviews. The authors indicate that the affinity production phase is important (with or without interviews), which is the strength of this study. During the focus groups the affinities generated were discussed at length to clarify them and operationalise them according to the participants' perceptions. Most of the reasons Northcutt and McCoy (2004:167-168) give to encourage follow-up interviewing, were dealt with during the focus groups, e.g. affinity naming, which took several sessions and used more than just generated cards from nominal coding (see section 4.4.4). The focus group session examples provided by Northcutt and McCoy (2004) mostly lasted a day and were used to generate affinities for further analysis during individual interviews. The possible limitation of a focus group-only study was overcome by using the focus groups to provide 'thick descriptions' as used by Henning *et al.* (2004:6, 37) to refer to 'an account of the phenomenon that is coherent and that gives more facts and empirical content but that also interprets the information in light of the empirical information in the same study..' In my stipulation of the IQA research process and flow, I provided what Henning *et al.* (2004:37) refers to as 'thick explanations' of the methodology itself.

Because I required more from the participants I spent more time conducting the focus groups to gather 'rich affinities' in terms of definitions and descriptions. In my discussion of the SIDs,

I continually referred to Figure 4.2 which gives descriptions and definitions of the affinities generated during the focus groups. Further follow-up interviews would have helped though, to understand what the generated SIDs meant to the participants. This can be a question for further study and a process to follow in future research as a contribution to the IQA research process.

The authors (Northcutt & McCoy 2004:168) further indicate that the SID from the focus group-only study should be as fully detailed as possible including a detailed ART and the Pareto Composite SID, which has been accomplished in this study. As a result, I am confident that I followed the correct IQA focus group procedure to overcome the focus group challenges encountered.

Thus, the only question remaining is how would the participants have made sense of the SIDs they constructed during focus groups in follow-up interviews. The interpretations I made of the SIDs using the definitions of affinities they generated might be different from how they might have defined the SIDs.

4.13 CONCLUSION

The IQA research process followed in this chapter proved to be rigorous and highly interactive. The participants were able to individually and as a group direct and prescribe the pace of the proceedings. They were allowed the opportunity to generate, analyse and clarify data through affinity generation, affinity grouping and naming and definition of affinities. The IQA focus groups allowed the participants to reflect on what they said and they had the opportunity to clarify their ideas further as the process took up many sessions (most focus groups used four sessions of two hours), which allowed them the opportunity to go home, come back, and work on the same affinities over and over again until they reached saturation in terms of definitions. I was able to guide and direct their thoughts by asking questions and challenging them to clarify further when necessary.

The disadvantage of using a fairly new research method and a highly structured method like IQA, is that it has very limited or no room for mistakes. If the procedure is not followed as suggested it disadvantages the whole study.

According to Northcutt and McCoy (2004:167), the focus group SID is useful in sharpening and clarifying the meaning of the affinities. The authors (Northcutt & McCoy 2004:167) further state that vaguely defined affinities frequently create irregularities or paradoxes in the ensuing SID, e.g. an affinity may have no relationship to any other affinity and therefore sit outside the system. This did not happen in this study, i.e. all affinities were related.

The complexity of IQA lies in the 'authority' the participants have in the analysis of data. The SID provided by the group represents their representation of their perceived relationship with their environment. My role was to guide them in generating affinities, defining them and making sense of their meanings and finally to make sense of their representations in my analysis.

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